THE

STUDY OF MEDICINE.

IN FIVE VOLUMES.

VOL. III.

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STUDY OF MEDICINE.

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BY

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IN FIVE VOLUMES.

VOL. III.

911

Fourth American Edition.

REPRINTED FROM THE LAST LONDON EDITION,

GREATLY IMPROVED AND ENLARGED.

BOSTON:
WELLS AND LILLY—STATE-STREET.

1826.

CLASS III.

CLASS III.

HÆMATICA.

DISEASES OF THE SANGUINEOUS FUNCTION.

ORDER I.

PYRECTICA.

FEVERS.

II.

PHLOGOTICA.

INFLAMMATIONS.

III.

EXANTHEMATICA.

ERUPTIVE FEVERS.

IV.

DYSTHETICA.

CACHEXIES.

CLASS III.

HÆMATICA.

ORDER III.

EXANTHEMATICA.

Eruptive Fevers.

CUTANEOUS ERUPTIONS ESSENTIALLY ACCOMPANIED WITH FEVER.

CLASS III. ORDER III. Origin of the ordinal name. Ordinary limitation of import.

THE term Exanthemata among the Greeks, from ἐξανθέω, "effloresco" "per summa erumpo," "to effloresce, or break forth on the surface" imported cutaneous efflorescences or eruptions *generally*. It has since been limited to express cutaneous eruptions *accompanied with fever*, a boundary assigned to it by Sauvages, Linnéus, Vogel, Sagar, Macbride, Cullen, and various others, and this, in effect, is its general meaning in the present day. Dr. Cullen, however, in his note on Exanthemata, thinks it worth considering whether the word should not be restrained to eruptions (he does not say *febrile* eruptions) produced alone by specific contagion: "eruptiones à contagione specificâ ortæ;" while Dr. Willan has still more lately narrowed it so as to include those eruptions only which fall within the meaning of the English term RASH, whether febrile or not febrile.

In what sense proposed by Cullen: how used by Willan.

Class III. Order III. Exanthematica. Eruptive fevers.

The two last senses of EXANTHEMATA, or EXANTHEMATICA, are new and singular. Dr. Cullen, however, has not followed up his own suggestion into his own classification; while Dr. Willan has not always continued strictly true to his own views and definition, as I have observed in the running comment introductory to the present order in the volume of Nosology to which the reader may turn, for a fuller examination of this subject, at his leisure.

In the present work employed in its common sense.

The term, therefore, in the present work, is employed in its common and current sense, so as to include all cutaneous eruptions in which fever exists as an essential symptom; whether accompanied with or destitute of contagion; which last is a doubtful, and perhaps an inappropriate ordinal character. Doubtful, because we cannot very precisely tell where to draw the line: and inappropriate, because it is a character that applies to diseases of very different kinds, and that are scattered over the entire classification, as dysentery and influenza in which there is fever without cutaneous eruption; itch, and many varieties of tetter, in which there is cutaneous eruption without fever, and blennorrhœa or clap, in which there is neither fever nor cutaneous eruption. The genera included in the order are distinguished by the nature of the eruption as consisting of red, level or nearly level patches of pimples filled with a thin ichorous fluid; of pimples filled with a purulent fluid; and of foul imperfectly sloughing tumours; and hence consist of the four following:—

I.	ENANTHESIS.	RASH EXANTHEM.
II.	EMPHLYSIS.	ICHOROUS EXANTHEM.
III.	EMPYESIS.	PUSTULOUS EXANTHEM.
IV.	ANTHRACIA.	CARBUNCULAR EXANTHEM.

General character.

Each of these, with the exception of the third, comprises several species: and all concur in evincing the existence of morbid and specific poisons in the blood, acting the part of animal ferments, converting the different fluids into their own nature, exciting the commotion

of fever, and being eliminated on the surface, as the best and most salutary outlet to which they can be carried, by the very fever which they thus excite.

Class III. Order III. Exanthematica. Eruptive fevers.

The whole is a wonderful circle of morbid and restorative action, evincing the most striking proofs of that instinctive or remedial power of nature whose presence in every part of every living frame, whether animal or vegetable, is continually discovering itself; and, which, under the general control of an infinite and omniscient Providence, is perpetually endeavouring to perfect, preserve, and repair the individual, and to multiply its species.

Evincing proofs of instinctive or remedial power.

We have many times had occasion to observe that, wherever any diseased action is taking place internally, there is a constant effort exhibited in the part or in the system generally, to lead it to the surface where it can do least mischief,* rather than let it spread itself on the deep-seated or vital organs, where its effects might be fatal. Mr. John Hunter was peculiarly fond of dwelling on this admirable economy of nature, and of illustrating it from the course pursued in inflammations of every kind;† which, to obtain this beneficial end, often wind their way outwardly through a multiplicity of superincumbent organization, instead of opening into some momentous cavity in the interior, from which it is perhaps only separated by a thin membrane. But there is no part of pathology in which this display of a final cause, of an operative intention admirably adapted to the end, is more striking than in the order of eruptive fevers.

Illustrated.

It is by means of the fever that the disease works its own cure; for it is hereby that a general determination is made to the surface, and the morbid poison is thrown off from the system.

Eruptive fever a natural mean of curing the eruption.

But the fever may be too violent; and, from accidental circumstances, it may also be of the wrong kind: both

But if violent more mischievous than the eruption.

* See especially Class II. Ord. II. On inflammation, Vol. II. p. 291.

† On Blood, Inflammation, &c. pp. 256. 450. 467.

Class III. Order III. Exanthematica. Eruptive fevers.

which facts occasionally occur in inflammations, and require the art of medicine for their correction.

Hence a small degree of fever only necessary.

When a febrile poison, producing a cutaneous eruption is generated, or has been conveyed into the blood, a small degree of fever is sufficient to throw it upon the skin; and if it exceed the proper extent, the specific virus will be multiplied, and the fever itself may become a source of real danger. It was formerly the practice to encourage the fever by cardiacs, a heated atmosphere, and a load of bed-clothes, from an idea that we hereby solicit a larger flow of morbific matter from the interior to the surface. The fact is unquestionable; for be the exanthem what it may, the skin will hence, in almost every instance, be covered with eruption. But it did not occur to the pathologists of those times, that the morbid virus was an animal ferment, capable of multiplying itself by accessories; and that heat and febrile action, beyond a very low medium, are among the most powerful accessories we can communicate. And hence the advantage of the modern practice of applying cold water in scarlet-fever, and cold air in small-pox, with a view of mitigating the fever that often accompanies these diseases: for, by diminishing the febrile violence, we do not, as was formerly imagined, lock up the contagion in the interior of the system, but prevent it from forming afresh and augmenting there.

Error of earlier practitioners in encouraging fever.

Examples of correction in modern times.

Fever may be of the wrong kind, as well as in excess.

But the fever, though the natural mode of cure, may not only be too violent, but it may be also of the wrong kind. And here, again, the whole scope of professional skill is often demanded.

Different contagions are accompanied with different fevers.

Some of the morbid poisons we are now adverting to have a natural tendency to excite a fever of one description, and others of another. Thus the fever of small-pox and measles is ordinarily inflammatory; that of scarlet fever may commence with an inflammatory type, but it has a strong tendency to run into a typhous form: while that of pemphigus and plague is typhous from the beginning.

Much also, in this respect, will depend upon accidental circumstances, as the constitution of the year, and the prevailing epidemic; the constitution of the patient, his habit of life, or hereditary predisposition. For under the control of these we sometimes see an eruptive fever, having naturally a typhous turn, restrained in its tendency; and, on the contrary, a fever with an inflammatory turn, as in small-pox or measles, converted into a malignant or a typhous. Yet the general intention pursued by the instinctive or remedial power of nature is one and the same: and it is the duty of the medical practitioner to watch over that intention, and co-operate with it; to moderate the natural means when in excess; to quicken them when deficient; and to correct them when deflected by accidental circumstances.

Constitution of the year often produces great influence.

GENUS I.

ENANTHÉSIS.

Rash Exanthem.

ERUPTION OF RED, LEVEL, OR NEARLY LEVEL PATCHES; VARIOUSLY FIGURED; IRREGULARLY DIFFUSED; OFTEN CONFLUENT; TERMINATING IN CUTICULAR EXFOLIATIONS.

Origin of the generic name.

GEN. I. THE term enanthésis is derived from the Greek ἐν "in, intra," and ἀνθέω "floreo"—"efflorescence from within or from internal affection." Whence the term stands opposed to exanthesis, which, in the present system, constitutes a genus under the sixth class, and comprises such efflorescences as are merely superficial or cutaneous, and not necessarily connected with internal or constitutional affection.

In what sense employed.

Enanthesis is here, therefore, used to express fever accompanied with rash, the latter word being employed in the broader of the two senses assigned it by Dr. Willan, as importing red, irregular, confluent patches; whether simple, as in the case of scarlet-fever; compounded of papulæ, small acuminating elevations of the cuticle, not containing a fluid, as in the case of measles; or existing in the form of wheales, as in that of nettle-rash.

And hence enanthesis, as a genus, furnishes us with three species:—

1. ENANTHESIS ROSALIA. SCARLET-FEVER.
2. ———— RUBEOLA. MEASLES.
3. ———— URTICARIA. NETTLE-RASH.

SPECIES I.

ENANTHESIS ROSALIA.

Scarlet-Fever.

RASH, A SCARLET FLUSH, APPEARING ABOUT THE SECOND DAY ON THE FACE, NECK, OR FAUCES; SPREADING PROGRESSIVELY OVER THE BODY; AND TERMINATING ABOUT THE SEVENTH DAY: FEVER A TYPHUS.

GEN. I. SPEC. I.

THIS is the SCARLATINA of most modern writers; a barbarous and unclassical term that has unaccountably crept into the nomenclature of medicine upon the proscription of the original, and more classical name, of ROSALIA, which it is the author's endeavour to restore.

The scarlatina of most modern writers.

Upon this subject I must refer the reader to the running comment in the volume of Nosology, where he will find it explained at full length. At present it is sufficient to observe that although, since the introduction of scarlatina, its use has been generally tolerated, no classical scholar has been satisfied with the term; while several have peremptorily refused to adopt it.

The term generally disapproved of.

Dr. Morton had so mortal an aversion to the term, that he preferred the error of blending scarlet-fever with measles, and of arranging the varieties of the two diseases under the common generic name of MORBILLI to employing *scarlatina*. De Haen appears to have had nearly as great a dislike to it.* Dr. Huxham, for a long time, eluded the term by using FEBRIS MILIARIS RUBRA, or MALIGNA, for some of the varieties of scarlatina, and FEBRIS ANGINOSA MILIARIS for others: Dr. Heberden has still more lately exchanged it for FEBRIS RUBRA; and Thiery, in direct allusion to the original name, calls

By Morton:

by De Haen

Evaded by Huxham.

and Heberden.

* Med. Contin. Tom. I. Cap. VII.

GEN. I. SPEC. I. Enanthésis Rosalia. Scarlet-fever.

it expressly *mal* de la ROSA ;* Ploucquet employs PORPHYRISMA, as Borsiero, or Burserius had made use of *purpura* before him; Dr. Willan continues scarlatina, but thinks it necessary to apologize for its continuance. "The denomination scarlatina," says he, "was first applied to this disease by British writers: however offensive the term may be to a classical ear it cannot well be displaced, having found admission into all the systems of nosology. Another age will correct and refine the language now used in subjects untouched by the masters of Physic.† It is singular that Swediaur with all his love for Greek terms, and the determination with which he sat out to give every genus a Greek name, should, while ranking this disease as a genus, still retain the objectionable term.‡

The porphyrisma of Ploucquet:

Purpura of Burserius.

Exchanged for mal de la Rosa.

Apologized for by Willan.

Swediaur.

It will not be the present author's fault if the correction, so generally called for in the case before us, should be postponed to another age; or the error complained of be chargeable on future nosologists.

The term scarlatina derived from the Levant.

In saying that "the denomination scarlatina was first applied to this disease by British writers," Dr. Willan can only mean that it was by British writers first applied *technically* and introduced, as a professional term, into the Medical Vocabulary: for the term itself is Italian, and was long, as a vernacular name, in use on the shores of the Levant before it was imported into our own country.

Scarlet-fever, measles, and small-pox introduced from the East: comparatively of modern date.

Scarlet-fever, measles, and small-pox seem, indeed, equally to have reached us from the East, and to be diseases of comparatively modern origin. Some writers fancy that they can distinguish a few traces of one or two of these in the works of Paulus Ægina, and other Greek physicians; but the passages referred to are too general and imprecise to establish any such conclusion. No such diseases are described; and had they existed at the time, a few determinate and scattered hints, which may apply to other diseases as well, could not have been the whole

Not to be found in the Greek writings.

* Recueil Periodique, II. 337. † Cutaneous Diseases, p. 283

‡ Nov. Nosol. Meth. Syst. I. 164

to which they would have given rise. The names, indeed, by which they were at first known, as VARIOLA, RUBEOLA, or rather RUBIOLA, ROSALIA, and even MORBILLI, evidently point to the school of Cordova, and lead us to the Arabian or Saracenic physicians for our first account of them. And it is not to be wondered at that in such accounts we should meet with some degree of confusion and many inaccuracies; and should perceive that as measles were for a long time confounded with small pox, so scarlet-fever was with measles; whence it is difficult, in one or two instances, to determine what is the precise species of disease referred to by Avicenna, Ali Abbas and Rhazes: for while they seem to allude to the scarlet-fever, we are not sure that they mean it.

GEN. I. SPEC. I. Enanthésis Rosalia. Scarlet-fever.

Vernacular names first applied at Cordova.

On this account it is that rosalia, rossalia, and rubeola, alike derived from the colour of the efflorescence, are, among the earliest writers who used these terms, applied equally to scarlet-fever and measles; and when some distinction was at length attempted by the introduction of the word *morbillo*, or morbilli, in like manner a Spanish or Cordovan diminutive, the line of distinction not being accurately drawn or adhered to, this term was also erroneously applied to both; and the confusion became more intricate. So *rougeole*, which among the French writers is the common name for measles, imported also, at one time, scarlet-fever: and this so generally that, when in process of time physicians became sensible of the difference between the two maladies, and it was necessary to establish distinct terms, we learn from Chevenau that, among the Marsellois, *rougeole* was at first appropriated to the scarlet-fever, while the measles were denominated *senapion*.* And in this manner both diseases continued in every country till within the last half century, to be regarded and even treated of with but little discrimination; sometimes as different species, sometimes as a common species, and sometimes as varieties of a common species. And hence, even in our own country, we find

At first used indiscriminately or with confusion.

* Observ. Med. p. 454.

GEN. I. SPEC. I. Enanthésis Rosalia. Scarlet-fever.

them united in several of their varieties, not only in the writings of Dr. Morton, but still more lately in those of Sir William Watson.

Rosalia sometimes considered under unnecessary subdivisions.

Since, however, they have been considered, and most correctly, as different diseases, another extreme has been run into; for rosalia itself has been broken into subdivisions that are in no respect worth contemplating separately; one or two of which, as we shall perceive presently, have themselves been elevated by some pathologists into the rank of distinct maladies. For all the purposes of perspicuity it will be sufficient to study it under the two following varieties:—

α Simplex. Simple scarlet-fever.	Fever moderate, and terminating with the rash; little prostration of strength: slightly contagious.
β Paristhmitica. Scarlet-fever with sore throat.	Fever severe; throat ulcerated; rash later in its appearance, and less extensive; often changing to a livid hue: highly contagious.

α E. Rosalia simplex. Simple scarlet fever.

Description.

Children are by far the most frequent subjects of both these varieties, and communicate it readily to each other. They are both occasionally epidemic, and in this form occur most usually at the close of the summer. "The scarlet fever," observes Sir Gilbert Blane, "very rarely affects adults. The great majority are under puberty; some between twenty and thirty; a few between thirty and forty. Only one case above forty has occurred to my own observation."* Public schools may be one cause of the greater frequency of the disease in our own day. The anticipating symptoms are those of fever; about the second day from which, in the FIRST VARIETY, numerous specks or minute patches of a vivid red colour appear about the face and neck; and within twenty-four

* Select Dissertations, &c. p. 213. 8vo. Lond. 1822.

GEN. I. SPEC. I. α E. Rosalia simplex. Simple scarlet-fever.

hours a like efflorescence is diffused over the surface of the body, and occasionally even tinges the inside of the lips, cheeks, palate and fauces. Sometimes the efflorescence is continuous and universal; but more generally on the trunk of the body there are intervals of a natural hue between the patches, with papulous dots scattered over them. There is an exacerbation in the evening, at which time the rash is most florid, as it is least so in the morning. In some cases that have occurred to me it has only shown itself in the day-time in the form of scattered patches, or even specks, though the skin has been very generally roughened and rendered anserine from a more than usual determination of blood to the cutaneous papillæ. Yet even in these cases the pathognomic efflorescence has appeared in a later or less degree in the evening. On the fifth day the eruption begins to decline; the interstices widen, and the florid hue fades. On the sixth the rash is very indistinct, and is wholly gone on the seventh.

The pulse, during the eruptive stage, is usually very quick and feeble; the tongue is covered with a whitish fur in the middle, often interspersed with scarlet points from an elongation of the turgid papillæ; while the sides of the tongue are of a dark red. The face is considerably tumefied; and there is great anxiety and restlessness, with a sense of tingling or itching in the skin, and sometimes at night a slight delirium. Though the fever is in most cases moderate, it sometimes runs high, but in the present variety is rarely alarming. In many cases, indeed, the eruption appears and passes through its course with little inconvenience of any kind from fever, itching, or restlessness.

Symptoms seldom alarming in this variety.

Sauvages, and Cullen, who has copied Sauvages's definition, represent the efflorescence as not taking place till the fourth day after the attack. Dr. Heberden, on the contrary, fixes it on the first or second day:* Dr. Willan, "usually on the second day." This last is the ordinary

Period of efflorescence variously fixed.

* Med. Trans. Vol. III. p. 307.

GEN. I. SPEC. I. *a* E. Rosalia simplex. Simple scarlet fever.

period, and as such I have entered it in the definition. It is obvious, however, that the interval observes some variety: though not a little of the apparent difference may be ascribed to the different stages of the disease in which a physician is first consulted; and his inability of fixing very accurately the commencement of the febrile incursion. Dr. Plenciz, on this account, pursues a middle course, and avails himself of an allowable latitude; "About the second or third day," says he, "and sometimes later, the red, unequal eruption, makes its appearance."* Generally speaking, the more violent the attack the sooner the efflorescence is thrown forth: and hence, during a severe and extensive range in Newcastle-upon-Tyne in 1778, Dr. Clarke tells us that, where it began with great vehemence, the eruption was often observed on the first day: but commonly it did not make its appearance till the second or third, and sometimes not till the fourth.

The more violent the attack the earlier the efflorescence.

We have seen that rosalia has been often confounded with measles, to which, indeed, it bears, in many cases, no small degree of resemblance. The following distinctive characters, therefore, may be of use to prevent a mistake.

Character of scarlet-fever compared with that of measles.

The efflorescence of the measles does not appear till two days later than that of scarlet-fever; and though it consists at first of broad patches amidst the general suffusion of red, stigmatized with interspersed dots, the dots are of a deeper colour, and are never lost in the efflorescence. It commences, moreover, with symptoms of a severe catarrh, which do not belong to scarlet-fever; and is without that restlessness, anxiety, and depression of spirits by which the latter is peculiarly distinguished.

Sometimes accompanied with a vesicular eruption.

From the great determination of blood to the cutaneous vessels, an effusion of coagulable lymph sometimes takes place in the papulous elevations, which is not entirely absorbed by the time the efflorescence subsides; and hence there is occasionally, though not often, an appearance of vesicles, sometimes nearly empty, and some-

* M. A. Plenciz. Med. Vindom. Tractatus de Scarlatinâ. 1776.

times nearly filled with a pellucid fluid, according as the effused serum has been more or less carried off. I have seen them exhibit the semblance of minute chicken-pox; and they have been thus noticed by many writers, particularly by Dr. Rush,* Dr. Withering, and Dr. Plenciz: the last of whom compares them to white miliary spots; and expressly states that he observed them on the sixth or seventh day from the commencement of the eruption, chiefly in the hands and feet: in other words, at the time when the turgid cuticular vessels had contracted and the efflorescence was on the decline. On examination, he further tells us that they appeared to be nothing more than cuticular elevations filled with minute bubbles of air. More correctly, perhaps, they were quite empty, the effused serum being carried off by absorption.† M. de Sauvages has made this form of the disease a distinct species, as scarlet-fever, with him, constitutes a distinct genus;‡ and as the effused fluid, when its finer parts are first absorbed, occasionally appears thick and opake, and has some resemblance to minute pustules of small-pox, he has distinguished it by the name of scarlatina *variolodes*.

GEN. I. SPEC. I. α E. Rosalia simplex. Simple scarlet-fever.

Explanation.

Called by Sauvages, but incorrectly, scarlatina variolodes.

There is another peculiarity which the disease sometimes exhibits, and to which the attention of the profession has of late been particularly called by Dr. Maton.§ The disorder, in the case alluded to, showed itself in a large family and evinced all the common symptoms of a mild rosalia; and, like rosalia, it proved itself contagious, for every member of the family elder or younger, to the number of eight, received it in succession. But its singularity was the great length of interval between the time of exposure to the attack in those who sickened nearest to each other in the order of its descent, and any sensible effect on the system; which, instead of being, as in ordinary cases, four, five, or six days, was, upon an average, not less than twenty-one days; varying in different indi-

Anomalous protraction of interval in some cases between exposure to attack and appearance of eruption.

* Medical Inquiries and Observations, p. 123.

† Class III. Ord. Exanth. Gen. VIII. ‡ Tractat. de Scarlatinâ.

§ Med. Trans. Vol. v. Art. XI.

GEN. I. SPEC. I. α E. Rosalia simplex. Simple scarlet-fever.

viduals, from seventeen to twenty-six days. And on this account, in conjunction with one or two other signs of minor importance, Dr. Maton, though he at first regarded the disease as a modification of rosalia, was afterwards inclined to believe it a new complaint requiring a distinct designation. Yet if we reflect how often a similar, or nearly similar retardation takes place in particular families after inoculation from either the small-pox or cow-pox, in which we have a much more definite period to calculate from, we shall rather perhaps be justified in adopting Dr. Maton's first view of the disorder, and contemplating it as a rosalia modified by a peculiar family temperament, or some other accidental control. In the paristhmitic variety or that accompanied with sore throat the eruption is always later in its appearance than in the simple form; in a case I shall have to quote from Dr. Perceval, not less than eight days later; though I have never known it protracted to so late a period as in the modification noticed by Dr. Maton, where the febrile symptoms have taken place as early as usual from the time of exposure. The efflorescence in the measles, however, sometimes evinces a like procrastination, and has appeared as late as the twenty-first day.*

And hence such cases not supposed by some to be genuine rosalia.

Similar retardation in other complaints.

β E. Rosalia paristhmitica. Scarlet-fever with sore throat. S. septorrhepes of Swediaur.

In the second or PARISTHMITIC VARIETY the morbid virus is chiefly directed to the fauces, instead of to the surface of the skin generally. It is the scarlatina *Septorrhepes* of Swediaur. And hence, in some cases, the cutaneous efflorescence is very slight, and consists of a few scattered patches of flush instead of a diffused sheet. The rash, moreover, appears later by a day or two, sometimes even a week; probably delayed by the same cause that interferes with its general spread over the skin, being the local irritation about the throat. This last symptom will be found to commence very early if the throat be minutely inspected; for though no complaint is usually made of uneasiness in the throat previous to the febrile symptoms, yet, if it be closely examined, the velum pendulum palati

Description.

* Buchholz Tode Med. Chir. Bibl. Band. 1. p. 36.

will be found redder than natural, and sometimes the uvula will appear to be a little inflamed, the pulse being at this time not more than slightly disturbed, or flurried rather than feverish.* Dr. Willan asserts that this takes place as one of the first effects of the contagion, and describes it, as "a dark-red line extending along the velum pendulum palati and lower part of the uvula."† Gradually, however, the tonsils become enlarged, and exhibit a florid paleness on their surface, which extends over the whole range of the palate, its velum pendulum, the uvula, and the posterior part of the fauces: the tongue assumes a high red colour, the papillæ over its entire surface are greatly elongated, and very tender to the touch; there is often a considerable stiffness in the muscles of the neck and lower jaw; the throat is rough and straightened from the second day of the eruption; and deglutition is performed with difficulty.

GEN. I. SPEC. I. β E. Rosalia paristhmitica. Scarlet-fever with sore throat.

All the common symptoms are more violent; the fever is severer, accompanied with nausea, vomiting of bile, great heat, and languor; considerable inquietude and anxiety, head-ache, and delirium; evidently proving a copious determination to the head as well as to the fauces. The pulse is feeble, the respiration quick; the throat becomes excoriated and throws off a large quantity of minute superficial whitish sloughs, which intermix with the increased flow of viscid mucus, and augment the difficulty of swallowing. The sloughs generally separate about the fifth or sixth day, or at the decline of the efflorescence; but sometimes they remain a day or two longer.

All the symptoms violent.

This is the ordinary course; but, in many cases, the symptoms run still higher; and the disease is alarmingly dangerous from its eruption. The pulse is small, indistinct, and irregular from the first; there is a stupid, heavy coma, or violent delirium with deafness; the ulcerations in the throat are deeper and broader, and covered with dark instead of with whitish sloughs; the tongue

And sometimes highly dangerous from the first.

* Dr. Sims, Memoirs of the Med. Soc. of Lond. Vol. I. p. 394.

† Cutaneous Diseases, loc. cit. p. 269.

GEN. I. SPEC. I. β E. Rosalia paristhmitica. Scarlet-fever with sore throat.

is lined with a black, chappy crust, and is exquisitely tender; the breath is fetid; the rash, extensive from the commencement, assumes a livid hue with intermixed patches of ghastly paleness; and death ensues shortly after the seventh day, sometimes on the sixth.

Resemblance to malignant paristhmitis or cynanche,

and is the cynanche maligna of Cullen:

The affection of the throat, in this last and most virulent attack, bears so near an approach to the malignant paristhmitis, and its peculiar symptoms commence so early, that some pathologists of great authority, and particularly Dr. Cullen and Dr. Withering, have regarded it rather as a variety of paristhmitis or cynanche than of rosalia, whence in Dr. Cullen's Synopsis it occurs under the designation of cynanche *maligna*. But as the scarlet or crimson eruption must be contemplated as a pathognomic symptom, this is to give us two distinct diseases, with the same essential signs; and Dr. Cullen has done this; for while he places this most virulent form of rosalia under his genus cynanche, he continues it, in the less virulent form under which we have just described it, as a subdivision of his genus scarlatina. The distinction,

who has still a scarlatina cynanchica, and hence the same disease twice over or differing only in degree.

however, is altogether unnecessary, and leads to no advantage either pathological or practical in the writings of those who have adopted it. With the exception of a higher degree of danger in the one than the other, from the fever assuming the character of a more malignant typhus, both forms of the disease are the same; they are equally produced by a specific virus; equally contagious and at times epidemic; accompanied with a similar rash; demand a like mode of treatment; and even, according to Dr. Cullen's own admission, so frequently run into each other as to be extremely difficult of discrimination. In consequence of which few later writers have allowed any such distinction whatever. De Haen, therefore, had reason to say, as he does, apparently in reference to Dr. Cullen's arrangement, that different and improper names have been affixed to scarlet-fever by different writers: but that varieties in climate or constitution produce the distinctions under which it has been described.

Dr. Withering, however, who was contemporary with

Dr. Cullen, embraced and strenuously supported his view; contending that in scarlet-fever with sore throat the fever is inflammatory, and in sore throat with scarlet-fever it is putrid. Yet, in describing the treatment of this inflammatory fever, he seems to have lost sight of his critical characteristic, for he tells us that its nature is debilitating or sedative rather than entonic; and condemns both purging and bleeding as the pulse will not allow of these evacuations.

GEN. I. SPEC. I. β E. Rosalia paristhmitica. Scarlet-fever with sore throat. Cullen's division supported by Withering.

In endeavouring still further to lay down the distinctive characters of the two, he observes, after Dr. Fothergill, that the angina *gangrænosa* (sore throat with scarlet-rash) usually commences in the winter or the spring, and chiefly attacks persons of delicate habits, as women and children; while the scarlatina *anginosa* (scarlet-rash with sore throat), on the contrary, usually commences in the summer or autumn, and commonly fastens upon the vigorous and robust. The scarlet-rash, however, of Newcastle-upon-Tyne in 1778, seems to have reversed this rule in its most essential point; for Dr. Clark to whom I have just referred, and who has given a very minute and interesting history of this epidemy, tells us that it made its first appearance in June, extending from Newcastle over many towns and villages in the neighbourhood; that it was most frequent in August, September, and October, declining about December; and that it raged chiefly among children and young persons, although a few adults exposed to the contagion did not escape.* Dr. Clark therefore concludes that both these diseases proceed from the same specific contagion, and ought rather to be considered as distinct forms of the same exanthem, than as distinct affections. It is accurately, also, observed by the same writer, that the epidemy of 1748, which Dr. Fothergill has so ably described under the name of Putrid Sore Throat, is essentially the same as that remarked upon by Dr. Cotton

His distinctive characters:

opposed by the remarks of others;

especially those of Clark.

* Observations on Fevers, especially those of the continued type, and on the Scarlet Fever attended with ulcerated sore throat, &c. 8vo. 1779.

GEN. I. SPEC. I. β E. Rosalia paristhmitica. Scarlet-fever with sore throat. and Perceval of Dublin.

in his letter to Dr. Mead, and which he then denominated Scarlet Fever, from an objection to any alteration of the name in common use.

The subject ought not to be closed without adding the following note from Dr. Perceval's manuscript comment on the author's volume of Nosology, already noticed on many occasions. It adds a high authority to the present arrangement of this form of the disease: and contains one or two remarks which very agreeably display the observant tenour of the writer's mind.

"Cynanche *tonsilaris* and *maligna*, I consider with you as a species of rosalia. All have been produced by the same specific contagion, which in one instance was imported here (Dublin) from England in a Pandora's box, containing plumed soldiers which had served to beguile the convalescent hours of a young family, and were sent by them as a present to their quondam-playmates in this capital. We have had no severe visitation of rosalia in this place for upwards of ten years. In some instances, besides, I have traced the progress of contagion from England, and believe it loses something of its ferocity by the way. Do you think it comes from the continent? A remarkable case occurred to me of rosalia *paristhmitica* characterized most distinctly with symptoms of what is called cynanche *maligna*. This, with sunk pulse, great prostration of strength, and haggard countenance, ran a course of *seven* days without eruption; during which time it was treated with wine and bark which removed the affection of the throat. On the *eighth* day, after a rigor, a fever supervened of rather an inflammatory type with a rosalia eruption. After proper evacuations the patient recovered."

The contagion has passed into Ireland from England.

That rosalia, under every form, is contagious, and sometimes epidemic, is now admitted without a question: and for the later appearance of the efflorescence in the paristhmitic than in the simple variety I have endeavoured to account. But whether some countries are more disposed to favour its appearance in the form of an epidemy than others, and particularly whether under

this form it be more common to England than to Ireland, as hinted at by Dr. Perceval, I have no data to determine.

GEN. I. SPEC. I. β E. Rosalia paristhmitica. Scarlet-fever with sore throat.

There are three modes by which this, or indeed, any other disorder may become epidemic, using the epithet in its general sense, as importing a disease of whatever sort that contaminates the atmosphere of a district or neighbourhood. It may proceed from a specific miasm generated from local or accidental circumstances in the atmosphere itself, as in the miasm of intermittent, and often of remittent fevers; from a like miasm generated in the body of a sick individual, and communicated to the atmosphere, as in typhus; or from a peculiar temperament in the atmosphere predisposing the entire population that inhale it to a common morbid affection. Of any specific miasm originating in the atmosphere, and producing rosalia, we have no proof whatever: but we have abundant proof of its issuing from the bodies of those who are sufferers under it; and, if I mistake not, of a peculiar temperament or constitution of the atmosphere in a particular district or season, that predisposes to its general production; for it often becomes common to many families so simultaneously, that they have had no power of communicating it directly or indirectly to each other. And hence, however it may be favoured by external concurrent circumstances, we have good reason for believing that the miasm is always ingenerated; and that the disease, when communicated, is always by specific contagion.

Three ways in which a disease may become epidemic: from specific miasm generated in the atmosphere; or communicated to the atmosphere from the diseased; or from a temperament of the atmosphere predisposing to a general production of the disease. Both the last perhaps operate in scarlet-fever.

We may hence account for its being in a pure and healthy, or unpredisposing atmosphere but slightly infectious: for, in treating of the laws of febrile miasm which, under different circumstances, originates both within and without the living body, we had occasion to observe that, when generated in the former manner, it appears to be less volatile than when in the latter, and less readily impregnates a periphery of pure air: whence the infection of typhus, which is commonly derived from this source, may be more easily avoided than that of intermittents or

Hence but slightly infectious in a sound atmosphere.

Remark applicable to all the exanthems.

GEN. I. SPEC. I. β E. Rosalia paristhmitica. Scarlet-fever with sore throat.

even remittents. The miasms of all the exanthems seem subject to the same law, as they all probably issue from a specific affection of the living body; and hence all of them are comparatively confined in the range of their actions, though some radiate their influence to a much greater distance than others, and are not so soon dissolved or decomposed.

Hence the reason why scarlet fever is more common in some periods than in others.

We may hence, also, see why the contagion of rosalia is received much more readily at some periods than at others. Nothing is more common than for a sporadic case of rosalia to occur in a family without communicating itself to the surrounding children, although no pains may have been taken to keep them separate; while a few months afterwards it may possibly be received from a neighbour's house, merely by an accidental visit for a few minutes. In the one case there was no predisposition in the habit to receive the complaint; in the other, the altered state of the atmosphere has, perhaps, produced such a predisposition in a very high degree, and prepared the way for the disease to become a very general epidemy.

The nature of the predisposing state of the atmosphere unknown.

What this peculiar state of the atmosphere is, has not yet been very accurately ascertained. It does not seem to depend altogether upon the season; though, commonly speaking, rosalia is more frequent towards the close of the summer, the common harvest-time of all debilitating diseases; and we also perceive that it is usually checked, at all periods, by a cold, dry, and bracing air, and hence is less frequent in the winter. But, with these exceptions, it has been found to range as an epidemy nearly equally from February to November; and sometimes through the whole of this term without ceasing: or only slackening its career when a keen dry breeze has sprung up from the north or the east.

Peculiarities belonging to it.

We see, also, another peculiarity in this disease, and that is in its ordinary limitation to children; and we see this character accompany it equally, whether the disease be sporadic or epidemic. Or, in other words, we behold the predisposing state of the atmosphere observing the same restriction as the disease itself when it operates in-

dependently of any such predisposition. Adults, indeed, do not entirely escape, but their attacks are rare, and for the most part less violent.

GEN. I. SPEC. I. β E. Rosalia paristhmitica. Scarlet-fever with sore throat.

The remote cause of rosalia, then, is a specific virus, or a specific miasm generated in the living body. Of its occasional or exciting causes, separate from the predisponents just adverted to, we know nothing. It has sometimes seemed to follow upon catching cold, and at others upon a surfeit of the stomach; but as these are perpetually taking place without producing such effect; and as rosalia has often occurred where nothing of the kind could be traced, we can lay very little stress upon such casualties.

General inference.

Influence of exanthems on the animal frame in rendering it less susceptive of the same.

All exanthems and nearly all fevers produce an influence on the system that renders it less susceptive of the same complaint for a certain period of time afterwards: yet the period varies from the plague, which exempts but for a few weeks, to the small-pox and measles, which usually extend the exemption to a term equal to that of a man's life: in consequence of which these disorders, except in a few anomalous cases, never appear but once in the same individual. Scarlet-fever seems to hold a middle range. It renders the system far less susceptible, and perhaps for several years; but the influence, in many individuals, wears off by degrees, and does not protect the whole of a man's subsequent life. Yet, as rosalia is a disease of infancy rather than of adult age, it is not often that persons suffer from it a second time, though examples of such a recurrence are occasionally to be met with.

The degree of influence differs in different diseases.

Its power in scarlet-fever.

Debilitating effects of scarlet-fever.

Rosalia is at all times a disease of debility; it prostrates both the body and the mind: but it has, in many cases, a peculiar tendency to weaken the absorbent system, and incapacitate it for carrying off the fluids that are exhaled into the internal cavities of the body; and hence to produce dropsy. This calamitous sequel usually creeps on insidiously and without suspicion, and does not distinctly show itself till the twelfth or fourteenth day, and often considerably later, when the patient and his friends

Particular tendency to dropsy.

Progress of the hydropic sequel.

GEN. I. SPEC. I. β E. Rosalia paristhmitica. Scarlet-fever with sore throat.

are flattering themselves that all danger is over. It commences with a peevishness, and a feeling of increased weakness and languor: the face is found to swell, and the urine to decrease in quantity, and to assume a somewhat bloody appearance, like the washings of flesh. The leuco-phlegmacy of the face extends gradually to the hands, feet, abdomen, and scrotum, till the whole body becomes puffed up. "I have known these swellings," says Dr. Perceval, "to attack all the cavities, the ventricles of the brain not excepted, and in one instance fatally, upon an eruptive affection so slight as hardly to be noticed. The child was not confined, but went out and was exposed to air."

This last hint should not be dropped in vain; for the torpitude produced on the mouths of the absorbents by a sudden or injudicious exposure to cold air on recovering from rosalia, is one of the most common causes of this lamentable result: and hence we see, also, why it should be more common in winter than in summer; and in children than in adults, from the greater delicacy of their age. Dr. Withering confirms the instance just offered by Dr. Perceval, that it is occasionally to be found after the mildest form of the disease; but adds that it succeeds chiefly to its malignant or worst species.

Medical treatment.

The curative treatment needs not long detain us. In slight cases of the simple variety, we may say, with Dr. Sydenham, that the disease hardly calls for medical assistance of any kind. When the fever is mild, it forms, as we have already observed in respect to exanthems of all kinds, the natural means of cure by determining the specific poison to the surface. An emetic may assist this determination, and has hence been almost always found serviceable; and if the bowels be confined, an aperient may follow; but violent purging will add to the irritation, and distract the remedial course that is taking place.

Little necessary in its mildest form.

Principle.

In the paristhmitic variety, the determination, instead of being to the skin generally, is powerfully deflected to the throat and head, and the fever is alarming from its violence. The therapeutic intention is here to counter-

act this morbid flow and regress of the febrile action, always having regard to the nature of the fever as well as to its severity.

GEN. I. SPEC. I. Enanthesis Rosalia. Scarlet-fever. Treatment.

Bleeding is the most direct and obvious means of reduction: but it is open to the same objection as in typhus; with the additional fact, that we have here to deal chiefly with children who have at all times less surplus of strength to spare than adults. Dr. Plenciz is, however, a strenuous advocate for the use of the lancet, and Dr. Armstrong has recommended it still more lately. Where the head is manifestly oppressed from congestion, it may be risked as a mode of local relief, and may be so far of service; but it is a risk at all times, and ought by no means to form a part of the general curative plan. With the exception of typhous miasm, there is nothing that so much exhausts, or rather, perhaps, suppresses the secretion of sensorial power as the miasm of rosalia; nor is there any evacuation that adds so immediately to the direct debility of the system as venesection: and consequently none that ought to be so studiously avoided as a general rule. And hence, often as the practice has been introduced by different individuals, it has never been common or established. Even Dr. Withering, who denominated the fever inflammatory, rigidly abstained both from bleeding and purgatives; and confined himself, in the onset of the disease, to emetics.*

Bleeding objectionable; though recommended by some writers.

Vomiting, which has just been recommended in the first species, is still more necessary in the present; for it not only tends to take off the dry burning heat of the skin by relaxing it, but unloads the fauces of the mucous and serous fluids that gorge and distend them. Whether also, as conjectured by Dr. Withering, it arrest the matter of contagion received from the breath of the sick, in its threshold, and prevent it from assimilating the confined and viscid mucus to its own nature, is a question which it is not necessary to examine into. Its practical advantage is sufficiently obvious, without leaning upon

Emetics highly useful.

Reasoning of Withering upon emetics.

* Account of the Scarlet Fever in 1778, 8vo.

GEN. I. SPEC. I. Enanthésis Rosalia. Scarlet-fever. Treatment

any hypothetical good; and it will often be proper, as recommended by Dr. Withering, to repeat it occasionally, as the foul and infarcted state of the fauces may require.

Purgatives how far useful.

We have just observed that this distinguished physician prohibited purgatives as well as bleeding. But in doing this he discovered still further the trammels of hypothesis; for while he conceived that emetics tend directly to throw off the matter of contagion from the organ in which he supposed it to be chiefly concentrated, he conceived at the same time that purgatives, on the contrary, only promote its diffusion along the course of the intestinal canal. This reasoning, however, cannot be allowed: the system should not be weakened by their violence, but their use can rarely be dispensed with. As aperients they remove whatever acrimonious material may be lodged in the intestines, and as revellents they powerfully recal all morbid determination from the head. Calomel, as operating upon all the excretories, is commonly to be preferred to any other cathartic, or may be conveniently combined with rhubarb.

Opium injurious.

The great inquietude that characterises this disease has induced many practitioners to try opium, but it rarely affords relief in any form or combination; and generally renders the head worse. Ammonia is in every respect a far more useful medicine; it takes off the languor, and stimulates the secernents, especially those of the skin, without quickening the pulse. In the form of sub-carbonate it should be given in doses of half a scruple dissolved in a large spoonful, or half an ounce, of water every three or four hours:* and in this way administered it has a highly beneficial and powerful effect upon the local inflammation of the throat. Occasionally also, and in the intervals, we should employ some of the acids, whether vegetable or mineral, which are always grateful to the patient, and seem more than any other internal mean to

* Pearl, Practical Information on the Malignant Scarlet Fever and Sore Throat.

GEN. I. SPEC. I. Enanthésis Rosalia. Scarlet-fever.

diminish the burning heat of the skin. But our chief dependence for this purpose must be upon Dr. Currie's bold and happy plan of employing cold water freely. Sponging will rarely be found sufficient, or rather will rarely be found of equal advantage with affusion; the fluid may, indeed, in this case be dashed against the patient till the heat is subdued, and the process be repeated as fast as it returns. The refreshment is often instantaneous, and operates like a charm; and seems to show, as I had occasion to observe formerly, not merely a refrigerant, but an exhilirating power, as though the water were decomposed and a part of its oxygene were swallowed greedily by the thirsty absorbents of the skin, which immediately becomes softer and moister as well as cooler.

Treatment.

Affusion of cold water:

water probably decomposed on its application.

The throat must in the mean while be deterged with antiseptic gargles of oxymel and port-wine, port-wine-negus, or any of those already noticed under malignant paristhmitis; or fumigated with the vapour of mineral acids. Blisters may also be applied with good effect. Dr. Withering objects to them; but the general practice is very much in their favour.

Gargarisms.

Blisters.

In severe cases Dr. Plenciz* had recourse to the aurum fulminans, as recommended by De Haen,† and speaks warmly of its success. Its design was to operate on the bowels and bladder, and it was given in composition with calomel, rhubarb, and squills. I have never tried it, nor can I very clearly trace out the path by which any benefit may be hence expected. Wine and nutritious food may be allowed, but somewhat less freely than in malignant quinsy. The convalescent state requires great care; and a damp cold atmosphere should be especially avoided from the tendency to dropsical swellings.

Aurum fulminans.

* Tractat. de Scarlatinâ.

† Rat. Med. Continuata. Tom. I. Part I. 8vo. Vienna.

SPECIES II.

ENANTHESIS RUBEOLA.

Measles.

RASH IN CRIMSON, STIGMATISED DOTS, GROUPED IN IRREGULAR CIRCLES OR CRESCENTS; APPEARING ABOUT THE FOURTH DAY, AND TERMINATING ABOUT THE SEVENTH; PRECEDED BY CATARRH; FEVER A CAUMA.

GEN. I. SPEC. II. Disease when perfect contagious from a specific miasm,

Of the earliest accounts we possess of measles, by the Arabian writers called AL-HASBET, the origin of the name of rubeola, and the frequency with which it was at first mistaken for rosalia, some notice has been taken under the last species. In its perfect form it is unquestionably contagious from a specific miasm, though we shall presently have to notice one variety that is inactive in this respect. Like rosalia, also, it is at times epidemic, and probably from the same cause,—a general predisposition in the population of the affected district or country to receive its contagion, perhaps to originate it, from some peculiar but unknown temperament or constitution of the atmosphere.

at times epidemic.

It occurs under the three following varieties:

α Vulgaris. Common Measles.	Rash slightly prominent extending over the mouth and fauces; harsh, dry cough, inflamed, watery eye.
β Incocta. Imperfect Measles.	Rash running its regular course, with little fever or catarrhal affection; affording no certain security against the common or regular disease.

γ Nigra. Black Measles.

Rash about the seventh or eighth day assuming a black or livid hue, interspersed with yellow; prolonged in its stay; and accompanied with extreme languor and quickness of pulse.

GEN. I. SPEC. II. Enanthésis Rubeola. Measles.

The only predisposition or exciting cause of rubeola that we are acquainted with, is the peculiar constitution of the atmosphere just referred to. And under the influence of this cause the FIRST VARIETY usually shows itself as an epidemic; generally commencing in the month of January, and ceasing soon after the summer-solstice. There seem, however, to be some other exciting causes than a peculiar state of the atmosphere or of the season; for we meet with a few scattered cases of it in almost every month of the year, evidently proving an ingenerate origin, and that the atmosphere is not auxiliary to its diffusion, from its continuing to be merely scattered; yet possessing its ordinary principle of contagion, which only appears to be less generally active because there is a less general predisposition, in those who have never undergone it, to be acted upon.

α E. Rubeola vulgaris. Common measles.

Ordinary exciting cause a peculiar constitution of the atmosphere.

Other exciting causes unknown;

but proved from its being at times sporadic.

Dr. Frank divides this disease like variola into the four stages of invasion, eruptive fever, efflorescence, and desquammation;* but the distinctive boundaries are less visible, and the division is of little importance.

It occurs most usually in children, though no age is altogether exempt from it. As rosalia is accompanied with a typhoid fever, rubeola is accompanied with a catarrhal; and hence, the opening symptoms consist of some degree of hoarseness, with a harsh dry cough, and frequently uneasy respiration; the eye-lids are tumified, the vessels of the conjunctiva turgid and inflamed, the cheeks are wet with a flow of acrid tears, and the nostrils loaded with acrid serum, that irritates them and excites an almost perpetual sneezing; the head aches or is drowsy; and the stomach, from sympathy, rejects its contents,

Found most commonly in children.

Description.

* De Cur. Hom. Morb. Edit. Tom. III. p. 234.

GEN. I. SPEC. II. α E. Rubeola vulgaris. Common measles.

On the fourth day the rash makes its appearance and assumes the character described in the specific definition. The stigmatised and pathognomic dots are sometimes at first attended by so general a flush as to be lost in them, and to give the appearance of scarlet-fever. I have already noticed several signs by which the two diseases may be distinguished, and the following may be added to the number. In scarlet-fever there is no cough, the eyes do not water, and the eye-lids are not red and swelled. In measles the papulæ are more acuminated, of a crimson instead of a scarlet hue, and do not appear till two days later than in scarlet-fever.

Distinctive characters of measles and scarlet-fever.

In small-pox the fever abates as soon as the eruption makes its appearance. In scarlet-fever this is by no means the case, and as little so in measles; the vomiting, indeed, subsides; but the cough, fever, and head-ache grow more violent; and the difficulty of breathing, weakness of the eyes, and indeed all the catarrhal symptoms, remain without any abatement till the eruption has completed its course.

The earlier the efflorescence the slighter the attack.

In rosalia we have also seen that the sooner the efflorescence breaks forth after the febrile attack, the slighter and more favourable the disease. The same occurs in rubeola. The ordinary period we have already stated to be the fourth day, but it occasionally appears on the third, when the patient commonly escapes with but little inconvenience.* A few rare examples may be found of its exceeding, instead of anticipating, its proper term; and this so considerably, that Buchholz gives us an instance of its not appearing till the twenty-first day: thus precisely rivalling the singular anomaly of scarlet-fever already quoted from Dr. Maton.†

Irregular periods of appearance.

Desquammation.

On the third or fourth day after the eruption first appears, the redness diminishes, the spots fall off in branny scales, which sometimes, however, are scarcely perceptible from their minuteness and tenuity; leaving a slight discoloration on the skin, with considerable itching. On

* Van der Haar, Waarneemingen. † Tode Med. Chir. Bibl. B. I. p. 86.

the ninth day from the beginning, where the progress has been speedy, and on the eleventh where it has been slow, no trace of measles remains. The eyes, however, in many cases continue still inflamed, and the cough is followed with severe peripneumonic symptoms which terminate in phthisis. Yet these sequelæ rarely occur except where the treatment has been improper, or there is a predisposition to consumption from a strumous state of the lungs or some other phthisical diathesis.

GEN. I. SPEC. I. α E. Rubeola vulgaris. Common measles. Residuary symptoms and sequels

If, on inoculation for small-pox, rubeolous contagion should have been previously received into the system, the variolous action will generally be, though not always, suspended till the measles have run through their proper course, when the inserted virus will resume its power and the variolous eruption follow in its due order. This quality of suspension, however, is not peculiar to the measles. "I have known," says Dr. Perceval in his manuscript comment on the present species, "bex *convulsiva* yield the *pas* to variola, and then resume its station." In like manner consumption is generally suspended during the entire course of pregnancy, and recommences its inroad on child-birth.

Power of suspending variolous action. Similar power in other diseases.

Measles in their more perfect form, which is that we are now contemplating, may be said, as a general rule, to occur but once in the course of a man's life; for though, as Dr. Baillie observes,* a few instances of a second attack are to be found, *exceptio probat regulam;* they are so rare as rather to maintain than disturb the law.† Dr. Willan asserts that he never met with an instance. The anomaly is unquestionably less frequent than in scarlet-fever, and shows that the influence produced by the rubeolous action on the habit is more rooted and effective.

Ordinarily occurs but once in a man's life; in a few instances a second time.

In its ordinary course measles is a disease unaccompanied with danger. It is in fact a catarrhal fever with a specific eruption. The fever, as we have observed already respecting exanthems in general, is necessary to a

Commonly unaccompanied with danger.

* Trans. of a Society for the Improvement of Medical and Chirugical Knowledge, Vol. III. 8vo. Lond. 1812.

† Roberdière, Recherches sur la Rougeole, Paris 1776.

GEN. I. SPEC. II. α E. Rubeola vulgaris. Common measles.

certain extent for the purpose of throwing the virus upon the surface: as inflammation in a certain extent is necessary to produce healthy suppuration. But a small degree of pyrectic action is in both cases sufficient; for if this be exceeded, the natural mean of cure itself becomes the disease, rather than the morbid condition it is intended to remove.

Extent of the eruption dependent upon the degree of fever. Treatment

In all instances the extent of the eruption will depend upon the fever whenever the latter is in excess. And hence our attention is to be mainly directed to the fever itself; for by diminishing the fever we necessarily diminish the eruption also. In measles, therefore, the remedies we have already enumerated for a catarrh are those we are to have recourse to. An emetic is always useful on the incursion of the disease; and should be succeeded by cooling aperients and demulcents, the skin being kept moist, and its heat subdued by mild diaphoretics.

Venesection how far expedient.

Dr. Cullen recommends blood-letting during every period of the disease; and it has hence often been practised at its commencement. It is rarely, however, that this can be called for except in the case of pneumonic inflammation; and as such an affection does not commonly appear till the close of the measles, we should, generally speaking, as recommended by Sydenham, reserve blood-letting till this period, and not exhaust the patient's strength before hand; and the more so, as even here the fever has sometimes proved a synochus, and terminated in a typhous form, as particularly noticed by Sir William Watson in the children of the Foundling Hospital in 1763 and 1768, who gives to this modification the name of putrid measles:* if, indeed, this were an example of the genuine disease, of which there is some doubt, though there is little doubt that in a few constitutions the disease has taken this turn. "In a charity school, where measles prevailed," says Dr. Perceval, in commenting on this species as given in the Nosology, "typhous infection was introduced; hence the variety α changed to γ." It is

Circumspection required.

Fever sometimes changes to a typhous form.

* Medical Observations, Vol. IV.—Hoffman Opp. Tom. II. p. 67.

highly probable that some such accidental cause occurred in producing Sir William Watson's modification.

GEN. I. SPEC. II. α E. Rubeola vulgaris. Common measles. Treatment

Exposure to cold, so peculiarly serviceable in small-pox, has, from a supposed analogy, been recommended also in measles by some rash practitioners, and adopted by others. All fair analogy, however, is against the practice: the fever in measles is directly catarrhal, and the analogy should be drawn, not from small-pox, but from catarrh, in which exposure to cold would, in the opinion of every one, be absurd and mischievous; nor can any thing be so likely to produce pneumonic inflammation, which, in truth, is most commonly the result of carelessness upon this very point. The room should be large and airy, free from currents of cold, but not hot; the drink warm, the food light, diluent, and in a liquid form. If the cough be troublesome, it will be useful to breathe the steam of warm-water, not through an inhaler, but over a large basin, with the head covered with a flannel large enough to hang over its edges; and by this mean the inflamed eyes will also have the benefit of the relaxing vapour. If the oppression of the chest, pain, and coughing should return, as they are apt to do on the disappearance of the eruption, venesection or cupping must again be had recourse to, however they may have been employed antecedently. Opium does not, in this case, afford the relief we might expect: it increases the heat and restlessness, but rarely conciliates sleep. A supervening diarrhœa proves the most favourable crisis, and should be very cautiously corrected. And where it does not take place naturally, it may be wise to imitate it by gentle laxatives.

Exposure to cold mischievous, and why.

Room spacious and airy.

Food.

Inhalation of vapour.

Opium rarely useful.

β E. Rubeola incocta Imperfect measles.

From a peculiarity of constitution, or some accidental influence exercised over it at the time, the rubeolous rash is sometimes found to run through its regular course with little fever or catarrhal affection, as though it were a simple cutaneous eruption, and without appearing to afford an immunity to the individual against a future attack; constituting our SECOND SPECIES.* This has usually

Sometimes called spurious measles:

* New York Medical Repository, Vol. v. Art. III.

GEN. I. SPEC. II. β E. Rubeola incocta Imperfect measles.

been called, and especially by the German writers, spurious measles; but as it occurs most frequently when the genuine measles are epidemic, and is doubtless a result of their contagion, it is less properly a spurious than an imperfect or immatured rubeola; and I have hence exchanged the term *spuria* for *incocta*. Dr. Willan denominates it rubeola *sine catarrho*; but as the genuine measles themselves, capable of affording emancipation, have sometimes appeared with very slight catarrhal symptoms, *incocta* seems preferable. "Some," says Dr. Heberden, "have been so fortunate as to have the measles appear after suffering so very little from fever, or any of the preparatory symptoms, that they could hardly say they had been ill." In this case the constitution is protected by a natural insusceptibility of the disease; which is the best protection we can possess. In the case of imperfect measles, it is only operated upon by some temporary influence: and hence as soon as this influence ceases, the common susceptibility returns.

by Willan rubeola sine catarrho.

Distinct from slight attacks of genuine measles.

γ E. Rubeola nigra. Black measles.

The THIRD VARIETY, or BLACK MEASLES, seems to consist in an intermixture of dark, discoloured, or petecchial spots from effused blood, with the proper rubeolous rash. It is found chiefly in persons of debilitated and relaxed fibres: and the dark patches will sometimes remain for ten or twelve days after the commencement of the eruption, with no other symptoms of fever than a quicker pulse and an increased degree of languor. It is rarely of serious consequence unless a typhous infection be accidentally communicated, as mentioned by Dr. Perceval, and usually yields with ease to an infusion of bark with sulphuric acid.

Rarely of serious consequence, unless typhus associate.

Rubeolous inoculation,

Inoculation has been tried for the measles by employing the acrid serum from the eyes, or from minute vesicles that sometimes appear between the patches of the rash. Dr. Home, not being able to obtain a contagious ichor from either of these quarters, drew blood from a turgid cutaneous vein where the eruption was most confluent; and impregnating a dossil of cotton with it, he applied the cotton to a wound made in the arm. It has occasion-

as performed by Dr. Home:

of uncertain result,

ally succeeded, but more frequently failed; nor does it seem to operate with any certainty in producing a mild modification; for many of the cases of inoculated measles have been quite as severe as we might reasonably have expected from a natural attack. It is in truth a very unnecessary caution in a disease that in its ordinary range excites so little alarm; and which leaves no blemish, like the small-pox, on the skin.

GEN. I. SPEC. II. γ E. Rubeola nigra. Black measles. and an unnecessary precaution.

SPECIES III.

ENANTHÉSIS URTICARIA.

Nettle-Rash.

RASH IN FLORID, ITCHING, NETTLE-STING WHEALS; APPEARING ABOUT THE SECOND DAY; IRREGULARLY FADING AND REVIVING, OR WANDERING FROM PART TO PART: FEVER A MILD REMITTENT.

THIS, like the last species, is rather a troublesome than a dangerous complaint; though it is always attended with some slight disorder of the constitution, as headache, drowsiness, coldness, and shivering, succeeded by great heat and a white fur on the tongue. But the stomach seems chiefly to suffer: and hence there is not unfrequently pain and sickness in this organ, with great languor, faintness, and anxiety. And, as a sympathetic affection, the eruption has often followed on any violent disturbance of the stomach alone, as surfeit, cold cucurbitaceous or other indigestible vegetables, mushrooms, crab-fishes, muscles, cupreous or other mineral poisons, introduced into the stomach by mistake.

GEN. I. SPEC. III. Precursive symptoms.

The exciting cause, however, of genuine idiopathic nettle-rash, is usually concealed from us; for it often makes its appearance without any of these irritants, or indeed any other that we are acquainted with; and hence

Exciting causes unknown.

GEN. I. SPEC. III. Enanthesis Urticaria. Nettle-rash

Dr. Heberden inclined to believe that the skin itself is often the chief seat of the disorder, and that the stomach and the system only suffer secondarily.* He has hence contemplated it as a modification of lichen, closely connected with the prickley heat of the West Indies, the essera or rather eshera of the Arabian writers. The resemblance is close; but there are characters by which the two diseases may be distinguished with tolerable ease. In nettle-rash the efflorescence is in scattered wheals with few papulæ; in lichen, in scattered papulæ with few wheals. In the latter the itching is more mordicant and aculeate; the eruption instead of terminating in a few days runs on to an indeterminate period; and, however irritating, produces little or no fever, and but a slight constitutional affection of any kind.

How far related to lichenous eruptions.

How distinguishable.

In Sauvages, on the contrary, nettle-rash is treated of as a scarlet-fever under the name of scarlatina *urticata*. But its character, as given in the specific definition, is sufficient to distinguish it from any form of rosalia, which has no wheals or elevated beds with a defined outline, and no sensation of stinging.

By Sauvages regarded as a variety of scarlet-fever.

How distinguished.

The nettle-rash occurs chiefly in summer, and more frequently among persons of the plethoric or sanguine habit, especially those who indulge too freely in eating and drinking. In children it seems sometimes to be connected with teething or irritation of the bowels. The eruption commonly takes place at night after the febrile symptoms just noticed have prevailed for about thirty or six-and-thirty hours; and on this account the Arabians elegantly and correctly denominated the coloured wheals (benat-allil,) "offspring or daughters of the night."

Found chiefly in the summer.

Commences chiefly at night.

How denominated by the Arabians.

By the length of the precursive symptoms the idiopathic disease is distinguished from the sympathetic affection, so closely resembling it, which is occasioned, as already observed, by crapulence, or substances introduced

Idiopathic form how distinguished from sympathetic.

* Med. Trans. Vol. II. p. 173.

into the stomach that disagree with it. In this last case the general swelling and eruption take place immediately, and subside as soon as ever the occasional cause is removed. Wheals of a similar appearance are sometimes found with other peculiarities, as of a whiter hue, or interspersed with small tubercles, or of very small diameter, except when they unite in clusters: some of these sorts trouble the skin permanently: others vanish and re-appear several times in the course of the day; others subside for a week or two, and then rally and re-occupy their stations. But all of them are of chronic duration, are little accompanied with fever; and cannot be considered correctly as varieties of the idiopathic disease. They occur, however, as such in Dr. Willan's treatise.

GEN. I. SPEC. III. Enanthesis Urticaria. Nettle-rash.

Spurious or anomalous forms.

A cooling regimen, and subacid diluents, with a free exposure to pure air, generally succeed in effecting a cure of nettle-rash without any other medical treatment. A gentle laxative or two, however, should be added to the domestic means: and if the itching be very troublesome it may be often allayed by the use of camphorated vinegar. The juice of fresh parsley has the reputation of producing an equally good effect; but evaporation by means of any other fluid applied to the itching parts would probably be found as beneficial.

Medical treatment.

Dr. Willan describes a single case in which urticaria proved fatal.* The patient was a man of about fifty years of age, who had impaired his constitution by hard labour and intemperance. The precursive symptoms were all violent, and the sickness and langour were followed by fainting fits; and he had great pain in the stomach which was increased by pressure. The fever was considerable, and soon attended with delirium. While the rash was most vivid his internal complaints abated; but he gradually got worse, and died on the seventh day. Here, again, however, the urticaria seems to have been only symptomatic. It afforded him relief, and offered the only chance of a recovery.

Has proved fatal;

but apparently only when complicated with some other affection.

* Cutaneous Diseases, p. 401.

GENUS II.

EMPHLYSIS.

Ichorous Exanthem.

ERUPTION OF VESICULAR PIMPLES FILLED PROGRESSIVELY WITH AN ACRID OR COLOURLESS, OR NEARLY COLOURLESS FLUID; TERMINATING IN SCURF, OR LAMINATED SCABS.

GEN. II. Origin of the generic term.

THE term emphlysis is derived from the Greek ἐμ or ἐν, "in, intra;" and φλυσις, "a vesicular tumour or eruption." Ἐκφλυω is usually employed among Greek writers nearly in the same sense as φλυω. In the present system it will be found employed somewhat more strictly, and in opposition to ἐμφλυω; so that while emphlysis, from the latter, imports an eruption of vesicles, whether large or small, produced by or accompanied with *internal and febrile affection* essentially connected with it; ecphlysis, from the former, imports an eruption of vesicles simply cutaneous or *superficial;* or, if, in a few varieties, combined with internal affection, not necessarily or essentially associated. Of the last, therefore, we shall have to treat in the third order of our sixth class, entitled ECCRITICA.

How distinguished from ecphlysis.

The genus EMPHLYSIS includes the following species:

1.	EMPHLYSIS MILIARIA.	MILIARY FEVER.
2.	———— APHTHA.	THRUSH.
3.	———— VACCINIA.	COW-POX.
4.	———— VARICELLA.	WATER-POX.
5.	———— PEMPHIGUS.	VESICULAR OR BLADDERY FEVER.
6.	———— ERYSIPELAS.	ST. ANTHONY'S FIRE.

SPECIES I.

EMPHLYSIS MILIARIA.

Miliary Fever.

VESICLES SCATTERED OVER THE BODY, OF THE SIZE OF MILLET-SEEDS; TRANSPARENT-RED, AFTERWARDS MILKY: PRECEDED BY A PRICKING SENSATION; SIGHING, ANXIETY, AND SOUR SWEAT.

GEN. II. SPEC. I.

Origin of the specific name.

THE disease takes its name from MILIA, "millet-grains," in consequence of the resemblance of its vesicles to the seeds of this plant in size, and, when matured, in colour. There is a doubt when it first made its appearance, and another doubt among some pathologists whether it be ever any thing more than a symptom of some other complaint.

Possesses two stages formerly called two varieties.

It has been treated of at least, for a century and a half, and that, too, as an idiopathic malady. It is said to have appeared first of all in Saxony: and the oldest writers assign two varieties of this disease distinguished in Germany by the names of *Rothen Friesel* and *Weisse Friesel*, or red and white miliaria,* but perhaps unnecessarily, as both varieties seem in most if not in all instances to be only different stages of the same affection. The vesicles are at first red from the colour of their under surface, or inflamed base, being transmitted through the transparent pellicle; they are afterwards opake and milky from absorption of the more attenuate part of the fluid, or some other change. In a few cases, however, the red hue seems to have continued throughout; and in others the white hue to have appeared from the commence-

Red and white miliaria.

Difference of colour explained.

* Sindner, Betrachtungen des Rothen und Weissen Friesels. Schweidniz, 1735.

GEN. II. SPEC. I. Emphlysis miliaria. Miliary fever.

ment: a variation in the nature of the secretion and in the mode of its absorption producing this difference of effect.

Often called purpura; and confounded with putrescent spots.

From the redness of the vesicles on their first eruption, this disease has also been denominated by many writers on the Continent PURPURA; and has hence been confounded with the petecchial or flea-bite-like spots that appear in scurvy and putrescent fevers: and the rather as miliaria is also a disease of debility. Ploucquet seems to have intermixed all these as well as pemphigus, and described them under the common name of miliaria.* In like manner Gerike's dissertation on this disease is intitled De Morbo Miliari, *alias Purpurâ dicto*;† and Juck's De Febre Miliari, vulgo *Purpurâ rubra et alba*, seu chronica.‡

Sometimes regarded as a rash,

From the minuteness of its vesicles, whose elevation can often only be ascertained by the finger, this species treads close upon the general complexion of the genus enanthésis, or rash-exanthem, and during its red appearance is often called a rash; and hence another cause of

and related to measles.

confusion and intricacy. By Linnéus and Parr it is on this account defined nearly in the same terms as rubeola, so far as relates to the eruption; and at Leipsic in 1650, where it is said to have been contagious or epidemic, was unquestionably mistaken for rosalia or scarlet-fever.

Occasionally a concomitant of both inflammatory and atonic fevers.

As a symptom it sometimes accompanies inflammatory fevers, but more generally those of atony. It is certainly at times attended with flea-bite-spots, or petecchiæ, and Huxham speaks of it as sometimes giving rise to them:§ an observation confirmed by a like statement of Boncerf:‖ and hence another reason why it has occasionally been treated of under the term purpura.

Description.

The eruption makes its appearance at an uncertain period after the commencement of the introductory fever; usually, however, on the third or fourth day. It seldom shows itself upon the face; but is first visible upon the

* Initia Biblioth. v. pp. 564, 565. † Hal. 1733. ‡ Erfort. 1716.
§ Vol. i. passim. ‖ Hautesierk, Recueil, ii. p. 217.

neck and breast, and thence spreads progressively over the entire body The febrile attack is usually somewhat severe in all its stages, the pricking sensation occurs during the hot-fit, and is like that of pin-points struck into the skin; the sweat is copious, but proves by its sour and olid smell that it is a morbid secretion, and hence affords no relief. The disease runs on with variable remissions or exacerbations for seven or even fourteen days, and has sometimes extended to twenty-one days, commonly terminating in a critical and natural sweat; the red transparent vesicles, as already observed, gradually assuming a whiter hue, and losing their transparency; and about the fifth day drying in minute crusts or scales; which, in some instances are succeeded, as in the case of aphthæ, by a new crop of vesicles that pass through a like course. Notwithstanding the anxiety and depression of animal spirits which so peculiarly mark this exanthem, it commonly maintains, through its entire range, a mild character, undisturbed by any alarming symptoms. In some instances, however, either from the constitution or peculiar circumstances of the patient, or the peculiar temperament of the atmosphere, it puts on a malignant character, and proves fatal in a few days.

GEN. II. SPEC. I. Emphlysis Miliaria. Miliary fever.

Seldom alarming in its progress:

but occasionally so from accidental circumstances.

Such a character it seems to have exhibited in the departments of the Seine and Oise in France in the Autumn of 1821, where also it committed a very extensive havoc as an epidemic. M. Rayer, who has given a valuable history of its range in this quarter, tells us that it usually commenced with symptoms of general restlessness, which were soon succeeded by a copious perspiration, that continued through its entire progress, whether it terminated in recovery or death. The eruption, which, as usual, appeared on the third or fourth day was general or partial, discrete or confluent. And as the transparency of the vesicle was in some instances, without a red basis, and continued till desquammation, he adds to the two varieties of red and white miliaria a third, which he distinguishes by the name of phlyctenous. He tells us also that, on dissection, the mucous surface of the stomach

As in France in 1821, where it became epidemic.

Phlyctenous variety.

GEN. II. SPEC. I. Emphlysis Miliaria. Miliary fever.

and intestines generally showed some proof of inflammation; an appearance which was likewise traced in various instances in the lungs, and even the brain or its membranes. The cause of the epidemy seems obscure; the air, however, was humid, and the face of the country is considerably mapped with marsh-land.

Probably not contagious.

We have no clear proof of its being contagious; and Stoll,* and most pathologists with him, deny that it is so at all. It is found indeed more frequently as a secondary or symptomatic, than as an original affection of any kind. Cullen denies that it is ever otherwise than symptomatic. But this is to speak as we have already seen in too proscriptive a tone. The author himself, indeed, has lately had a clear and well marked example of its idiopathic appearance in a young gentleman of a bilious habit, thirteen years of age, in which the vesicles were very numerous, but distinct. They passed through the two stages of a red and milky hue, and terminated on the seventh day in branny scales, unconnected with any other ascertainable disease: and M. Planchon has given abundant instances of the same kind.† Professor Frank affirms that it is often epidemic, and in some parts endemic;‡ but his description seems to combine the symptoms of other diseases along with those of genuine miliaria, so as to make it a mere satellite upon a more imposing potentate.

Mostly a secondary affection.

According to Cullen always so.

The contrary evinced.

Supposed by Cullen to be produced by excessive perspiration.

Dr. Cullen, however, conceives it to be nothing more than an eruption occasioned by a stage of sweating, protracted till it has produced debility, in any fever whatever. But in this case we should expect it most frequently in the clammy saburral sweats of typhous fevers, in which it is only occasionally to be met with, and certainly less frequently than in other fevers. M. Planchon regards it as proceeding most frequently from obstructed perspiration, which he lays down as its common cause: and M.

By Planchon, by suppressed perspiration.

* Rat. Med. II. pp. 58, 169.

† Dissertation sur la Fievre Miliàre, &c. Tournay. 8vo.

‡ De Cav. Hom. Morb. Epit. Tom. III. § 322. p. 181. 8vo. Mannh. 1792.

Triller instead of being a result of weakness, when in a symptomatic form, asserts that in various instances it proves critical.*

GEN. II. SPEC. 1. Emphlysis Miliaria. Miliary fever.

In few words, miliaria when idiopathic is an eruption accompanied with a mild typhus for the most part, though not always, and a peculiar irritability of the skin. And where the same eruption appears as a symptom of some other disease, it is probable that a like irritability of the skin has been produced by a course of saburral or acrimonious sweating.

Pathology.

Of its remote or even exciting causes we are utterly ignorant. The stomach seems sometimes to be overcharged; cold in the feet has been suspected; and, as observed by M. Planchon, we have often obvious proofs of obstructed perspiration. But all these facts occur in thousands of instances without producing any such result.

Remote and exciting causes equally unknown.

It is, however, unquestionably a disease of debility, and has sometimes, like rosalia, been followed by cellular or abdominal dropsy. And to this character of weakness our eye should be directed in attending to its cure. Every thing that heats and stimulates should be avoided. The bowels should be cleared of all irritating materials by mild laxatives; and, if offensive breath or any other symptom should indicate defedation of the stomach, an emetic should be given at the first. Cooling drinks, light bedclothes and a cool atmosphere will, in every case, be of essential service; and the patient may be allowed to lay with his hands and arms out of bed.

Medical treatment.

By these means alone, Dr. Cullen thinks he has frequently prevented miliary eruption in lying-in women and others, where it might have been expected as a concomitant. But where it has actually appeared, he adds to this regimen the use of tonic and antiseptic remedies, particularly Peruvian bark, cold drink, and cold air.

Purgatives, however gentle, have been objected to by many pathologists: but when not carried beyond the

* Trillerr et Molinarii Epistolæ mutuæ de verâ Exanthematum Miliarium differentiâ.

GEN. II. SPEC. I. Emphlysis Miliaria. Miliary fever. Treatment.

strength of the patient, they rarely fail to be of service. "I am convinced by experience," says Sir George Baker, "that the prudent application of this practice to the miliary fever has been of singular advantage: and it is worthy of observation in this place, that the symptoms of the measles are often rendered less formidable, when, during this disease, the patient has every day two or three evacuations by stool."*

Perspiration not only to be checked,

but changed in its nature.

Tepid ablution.

Antimonial alterants with mineral acids.

Camphor.

Something, however, more specific than this general plan will, in many instances, be found necessary. In his own practice, the author has endeavoured not merely to check but to change the perspiration: and hence, while from an early period of the disease he has employed tepid ablution or sponging, which is always highly refreshing, he has given small doses of antimonial powder with infusion of roses containing a surplus of sulphuric acid: and has rarely continued this course for four and twenty hours without finding the sweat less copious and of a more natural quality. And where the languor has been distressing, he has added camphor in the form of pills, giving a scruple or half a drachm in the course of the twenty-four hours.

Alike eruption produced by merely irritating the skin;

but here no constitutional affection.

That the skin is in a state of peculiar irritation is highly probable from our being sometimes able to excite a like eruption by wearing a shirt of coarse flannel or horse-hair. And hence Dr. Darwin gives one example of miliaria, as he calls it, "produced by the warmth, and more particularly by the stimulus of the points of the wool in flannel or blankets applied to the skin, which by cool dress, and bed-clothes without flannel, soon ceased." He has distinguished this affection by the name of miliaria *sudatoria:* but it ought rather to be regarded as a variety of intertrigo, or fret.

* Med. Trans. Vol. II. Art. XIX. p. 300

SPECIES II.

EMPHLYSIS APHTHA.

Thrush.

VESICLES GRANULAR, ROUNDISH, PEARL-COLOURED; CONFINED TO THE LIPS, MOUTH, AND INTESTINAL CANAL; TERMINATING IN CURD-LIKE SLOUGHS; OCCASIONALLY WITH SUCCESSIVE CROPS.

APHTHA is derived from the Greek ἅπτω "accendo," "to burn, or inflame." Like the preceding species this eruption, though at one time supposed to be papulous, is now generally admitted to consist of minute vesicles containing a whitish or milky fluid, when matured: and hence, in a nosological arrangement, it naturally follows upon miliaria. GEN. II. SPEC. II. Origin of the specific term.

This disease is found under three varieties, a white, a black, and a chronic:

α Infantum. White thrush.	Appearing in infants soon after birth; and often extending from the mouth to the intestinal canal; mostly with slight febrile symptoms, and white sloughs.
β Maligna. Black thrush.	Accompanied with great debility of vascular action; usually ascending from the larynx into the mouth; sloughs black; fever a typhus.
γ Chronica. Chronic thrush.	Protracted and exacerbating; with great emaciation and hectic fever;

GEN. II. SPEC. II. Emphlysis Aphtha. Thrush.

extending through the whole range of the intestinal canal.

Pathology.

The disease consists in a peculiar acrimony that irritates the whole mucous membrane, and particularly the mucous glands of the mouth and fauces, producing minute vesicles and sloughs. In the second and third species some of the smaller blood-vessels are also eroded at the mouth, and hence the sloughs become livid or ulcerated.

All the varieties, therefore, occur only under circumstances of considerable debility; and hence while the first is usually found in infancy, the two last are mostly an accompaniment of low-fevers, old age, or cachexies.

α E. Aphtha infantum. White-thrush. Description.

The WHITE THRUSH, or that of infancy, commences in the mouth. The angles of the lips are usually first beset with the eruption, probably from their exertion and fatigue in the act of sucking. From these it spreads in scattered papulæ over the tongue and cheeks, till at length many of the papulæ coalesce, and the eruption appears in patches, or strata. The fauces become next affected, and it descends thence through the esophagus into the stomach, and travels in a continuous line through the entire course of the intestines to the rectum, the feces being often loaded with aphthous sloughs.

Travels from the mouth downwards to the intestines.

Sometimes terminates in the mouth with a single crop of eruption.

In very mild cases the disease restrains itself, or by judicious management is restrained, to the mouth, and terminates upon a single separation of the curd-like crusts. But it usually proceeds farther; and a second, and even a third crop, takes the place of that which disappears. The general health is, in the mean time, but little disturbed, though the stomach evinces acrimony, the pulse is often a little quickened, and the infant is rendered fractious. But in an unhealthy habit, when the food is innutrient, and the frame weak and atrophous, the undersurface of the vessels ulcerate, the ulceration spreads wider and deeper, a low fever ensues, and the little patient sinks beneath its malignancy.

But usually migrates and appears in a second or third crop.

Has sometimes proved fatal.

Fluid highly acrimonious and erosive

In the mildest form this eruption seems to be highly

acrimonious; for the nipple of the nurse is sure to be affected. There is little doubt, moreover, that the acrimony is specific and contagious: though, in order to multiply itself and preserve its peculiar powers, it seems necessary that it should come into close union with the same membrane, or a membrane of the same structure as that which originates it. Sine proximo contactu, says professor Frank, communicari hunc morbum, non facilè concedimus.* Hence the nipple, though corroded by the sharpness of the humour, does not produce aphthæ, nor does the ulceration spread beyond the reach of the acrid ichor: but it has been received by kissing the infected lips of an infant; and has in this manner propagated itself to adults as well as to children.

GEN. II. SPEC. II. α E. Aphtha infantum. White thrush.

Probably specific and contagious. Hence propagable by kissing.

But, beyond this, we have good authorities for believing it at times to be epidemic. For not only all the children of the same family, how cautiously soever separated from one another, but many of those of the same neighbourhood, have been known at times to suffer from it simultaneously. Yet whether in this case the epidemy be the result of the specific matter of the exanthem, floating as an undissolved miasm in the atmosphere, or whether any particular intemperament of the atmosphere itself predispose the body to the generation of aphtha, is unknown.

Sometimes epidemic.

In the cure of this species our first object should be to remove all acrimonious materials from the primæ viæ by a laxative or emetic, or both, and thus, as far as we can conjecture concerning it, root out the primary source of disease. We must at the same time carefully examine the health of the nurse of the infant, if the infant be at the breast, and particularly as to the nature of the milk, and the freedom of the nipple itself from all primary disease, so that the child may not have a foundation laid for it in this quarter. If the child be weaned, we must be particularly attentive to the nature of the food, and the mode of its preparation, concerning which nurses,

Curative intention.

Health of the nurse to be inquired into.

Nature and preparation of the food.

* De Cur. Hom. Morb. Tom. III. § 367.

GEN. II. SPEC. II. α E. Aphtha infantum. White thrush. Curative intention. Detergent gargles. Inviscating astringents: but not too irritant.

when left to themselves, are often too careless. And we have next to prevent the multiplication of the papulæ by syringing off the acrimonious fluid as well as we are able with diluting or detergent gargles, and expediting the separation of the sloughs by inviscating astringents, as bole armenic, alum, borax or catechu, intermixed with mucilage or honey. These astringents, however, must not be made very sharp; for in this case we shall hurry off the little sloughy curds too rapidly, irritate the tender surface of the new skin, and produce a new crop of eruption; which is perhaps excited more frequently by being thus too busy and precipitate than by any other means whatever. If the disease have descended into the stomach and intestines, a mixture of rhubarb and magnesia given occasionally will be the best medicine with which we can follow it up.

β E. Aphtha maligna. Black thrush. How produced.

The second variety, or BLACK THRUSH is sometimes found idiopathically in old age when all the vital resources are failing, and the constitution is sinking apace; but it is more commonly a concomitant on acute debilitating diseases; as in typhous or malignant remittents. Stoll affirms that in all these cases the disorder commences not in the mouth as in infants, but in the stomach, and works its way both upwards and downwards;* and, from the pain and cardialgia that are often complained of antecedently, there seems ground for this opinion. Birnstiel makes the same remark, and compares the feeling to that of a tense cord extending from the cardia to the navel.† This variety is also said to be at times epidemic and, by some, contagious. But it should be observed that in most of these cases aphtha has appeared as a concomitant of other diseases, and probably as the result of them. Thus when it is affirmed by Muguet to have been decidedly contagious at Paris on a particular occasion,‡ an alarming typhus seems to have been present also. Stoll gives the same account of it, but it was then

Works upwards from the stomach.

Said to be at times epidemic and contagious: but perhaps only as connected with other contagions or epidemics.

* Rat. Med. 167. † Sterblichkeit im Krankenhaus zu Bruchsal.

‡ Raulin. Von Erhaltung der Kinder.

united with miliary fever;* and on another occasion, when it appears to have had pretensions to an epidemic range, it was combined with a prevailing intermittent.† GEN. II. SPEC. II. β E. Aphtha maligna. Black thrush.

In all these cases the mode of treatment must depend upon the nature of the particular case. In the drooping of old age we can only palliate; and our best palliatives will be cordials, as port-wine negus, or wine itself, and stimulating nutritive food: where the aphtha is dependent upon some other affection it can only be remedied by remedying the parent disorder. Treatment

In very cold northern, and especially in cold marshy climates, aphtha in one of its varieties is said to occur frequently in all ages, and often without fever. As we have already seen that it is very generally the result of a reduced state of health and vigour, this is by no means improbable; and the best means of opposing it is warmth, a pure and unstagnant air, exercise, and a generous diet.

The THIRD VARIETY, OR CHRONIC THRUSH seems chiefly also to have its first seat in the stomach, or some adjoining viscus. γ E. Aphtha chronica. Chronic thrush.

It has been described by Hillary under the name of aphthoides *chronica*, and more lately by Dr. Latham under that of cachexia *aphthosa*. It is more frequently found in hot than in temperate climates, from the inroad which is so often made upon the strength of the constitution by the permanent excitement of the climate.

"A slow hectic fever," says Dr. Latham, "with a pulse weak, and a little quicker than natural, marks the commencement of this disease. Pimples on the edges of the tongue, with superficial blisters within the mouth and fauces, next succeed, and a corresponding heat and soreness of the stomach more or less accompany this and every stage of the disease."‡ The whole intestinal canal soon afterwards becomes affected, and diarrhœa, and not unfrequently dysentery, are the consequence. The irritation then subsides, as though the disease had worn itself out Description by Latham.

* Loco citato. † Fontanus. Annal. p. 59.

‡ Med. Trans. Vol. v. Art. VI.

GEN. II. SPEC. II. γ E. Aphtha chronica. Chronic thrush.

but there is not vigour enough in the constitution to heal the exulcerations; and, the original cause continuing, fresh exacerbations take place, and every symptom is more aggravated, usually accompanied moreover with a fearful despondency. These repeated recurrences gradually exhaust the system, and the patient at length sinks beneath their persevering assaults.

Exciting causes.

Dr. Thomas has given a good account of this affection as it has occurred from time to time in the West Indies: and ascribes it to general relaxation, exposure to cold combined with great moisture, obstructed perspiration, and an acrimony of the humours.* And hence many of its causes, as well as most of its symptoms, are those of the preceding variety.

Treatment

During the exacerbations opium seems to afford the best relief; while in the intermissions light bitters and other tonics should be had recourse to. For the distressing irritation that often exists in the throat and rectum, Dr. Latham is bold enough to recommend gargles and injections of diluted litharge-water; the latter in combination with laudanum.

SPECIES III.

EMPHLYSIS VACCINIA.

Cow-pox.

VESICLES FEW OR A SINGLE ONE; CONFINED TO THE PART AFFECTED; CIRCULAR, SEMITRANSPARENT, PEARL-COLOURED; DEPRESSED IN THE MIDDLE: SURROUNDED WITH A RED AREOLA.

GEN. II. SPEC. III. History.

THIS disease attracted attention in the county of Dorset about forty or fifty years since, as a pustular eruption derived from infection, chiefly showing itself on the hands of

* Modern Practice of Physic, p. 528.

milkers who had milked cows similarly disordered. It had been found to secure persons from the small-pox; and so extensive was the general opinion upon this subject even at the time before us, that an inoculator, who attempted to convey the small-pox to one who had been previously infected with the cow-pox, was treated with ridicule. A formal trial was made, however, and it was found that no small-pox ensued. About the same time a farmer of sagacity of the name of Nash, duly attending to these facts, had the courage to attempt artificial inoculation on himself; and the attempt is said to have succeeded completely. Similar facts and numerous examples of them were accordingly communicated to Sir George Baker, who, having engaged not long before in a most benevolent though highly troublesome controversy respecting the cause of the endemial cholic of Devonshire, was unwilling, notwithstanding his triumph, to tread again the thorny paths of provincial etiology. Gloucestershire, however, another dairy county, had witnessed the same disease with similar consequences; and the same opinion generally prevailing in distant districts of both counties, afforded proof that the power thus ascribed to cow-pox was not wholly visionary.*

GEN. II. SPEC. III. Emphlysis Vaccinia. Cow-pox. First distinctly noticed half a century ago as a prophylactic against small-pox

Facts communicated to Sir George Baker;

Dr. Jenner, then resident at Berkley in Gloucestershire, pursued this hint with great judgement and unabated ardour. He was at first foiled by not distinguishing between the genuine cow-pox and an ineffective modification of it, or a spurious disease of nearly a similar appearance, to which the same animal is subject, but which is no preservative against the small-pox; and found another difficulty in determining the period of time within which the vaccine virus maintains its prophylactic power. Having at length, however, made himself master of the distinctive characters of the genuine vesicle, he ventured to publish the discovery in 1798, and to recommend inoculation with the virus of vaccinia as a substitute for variola. The result is known to every one: the discoverer has

Subject taken up by Jenner.

Difficulties he had to encounter.

Publishes his discovery in 1798.

* Evidence delivered before the Committee of the House of Commons, 1821.

GEN. II. SPEC. III. Emphlysis Vaccinia. Cow-pox.

been justly and liberally remunerated by parliament, and vaccine inoculation has passed with rapid progress over every quarter of the world, from the arctic circles to the extremes of Asia and Africa; and been adopted by civilized and uncivilized nations, by blacks as well as by whites, by the Fin, the Hottentot, and the Hindoo.

Rewarded by parliament: rapid and extensive progress of vaccine inoculation.

The disease in its present state may be said to embrace the four following varieties:

α Nativa. Natural cow-pox.	Genuine cow-pox as it ordinarily appears on those who accidentally receive it from the affected cow.
β Spuria. Spurious cow-pox.	An ineffective modification of cow-pox, or a different but resembling disease incapable of preserving against small-pox.
γ Inserta. Innoculated Cow-pox.	The genuine cow-pox as it appears on inoculation.
δ Degener. Degenerate Cow-pox.	Cow-pox degenerated in its specific power of preservation from unknown causes.

α E. Vaccinia nativa. Natural cow-pox.

In the NATURAL FORM OF COW-POX, or as immediately received by milking or otherwise handling a diseased animal, the vesicles are more or less numerous, and appear on the hands or such parts as have been in contact with the affected udder; of a blueish tint: the fluid at first limpid; afterwards opake and purulent; often with enlargement of the axillary glands, and considerable fever.

Distinctive characters.

Description in the human subject:

Most frequently the vesicles make their appearance about the joints, or extremities of the fingers; their figure is circular, and there is a slight dip from the circumference to the centre. The fever opens with its usual symptoms of lassitude, pain in the head, limbs, and loins, rigor, vomiting, and a quickened pulse; the head sometimes continues affected after these preparatory signs have gone off, and is even accompanied with delirium.

The inflamed and ichorous tubercles having suppurated, burst in three or four days from distention, and become troublesome sores, healing slowly, and occasionally assuming a phagedenic appearance. The fever in the meanwhile abates and ceases altogether about the seventh day. The fluid discharged from the ulcers is highly contagious; and the eye-lids, lips, nostrils, or any other part of the body, is sure to become inoculated with it if scratched or rubbed with the fingers accidentally charged with the matter.

GEN. II. SPEC. III. α E. Vaccinia nativa. Natural cow-pox.

In the affected cow itself the tubercles are still larger, or rather consist of vesicles surrounded by a broad and circular erythema: the animal droops considerably and yields but little milk. The ulcers are foul and often obstinate.

in the cow.

In the SPURIOUS COW-POX, or the disease to which cows are subject, that bears a near resemblance to the genuine, and is often confounded with it though destitute of its prophylactic power, the vesicles are less uniformly circular; purulent from the first; without the blueish tint; with little or no central depression. Whether this, in the animal itself, be strictly a variety of a common species, or a distinct species of a common genus, has not been accurately determined. But it is now fully ascertained that this affection of the cow produces no security by inoculation, and was the cause of much confusion and many failures at first, and possibly may be of some in the present day.

β E. Vaccinia spuria. Spurious cow-pox.

Distinctive characters.

Produces no security against small-pox.

In the INOCULATED COW-POX from genuine virus, the pathognomic signs are the following: vesicle single, confined to the puncture; cellulose; blueish-brown in the middle; fluid clear and colourless to the last; concreting into a hard, dark-coloured scab after the twelfth day.

γ E. Vaccinia inserta. Inoculated cow-pox.

Descriptive characters.

In propagating the disease from the inoculated vesicle the fluid should be taken before the ninth day, and from as early a period as it can be obtained. After the ninth day it is usually so inactive as not to be depended upon.

Time limited for taking the fluid.

If the fluid be not transparent, it forms a decisive proof either that it is spurious or imperfect. The punc-

Test of genuineness from transparency.

GEN. II. SPEC. III. γ E. Vaccinia inserta. Inoculated cow-pox.

ture should be made as superficially as possible; for if much blood be drawn the fluid may become so diluted as to be rendered ineffective, or may be entirely washed away.

Puncture should be superficial.

Inoculated cow-pox milder than in its natural state.

As small-pox by inoculation is uniformly a far milder disease, and accompanied with a smaller crop of pustules than when received naturally, cow-pox by inoculation undergoes a like change. There is sometimes a little increased quickness of pulse and constitutional indisposition; and in very rare instances, a few pustules have been thrown forth around the areola or even on the limbs; but with these occasional exceptions, the eruption, as already noticed, is confined to the single vesicle produced by the puncture, and there is scarcely any perceptible fever.

Progress of the disease.

Advance of the vesicle.

The general progress is as follows. The puncture disappears soon after the insertion of the lancet: but on the third day a minute inflamed spot becomes visible. This gradually increases in size, hardens, and produces a small circular tumour slightly elevated above the level of the skin. About the sixth day, the centre of the tumour shows a discoloured speck formed by the secretion of a minute quantity of fluid; the speck augments in size and becomes a manifest vesicle, which continues to fill and to be distended till the tenth day: at which times it displays in perfection the peculiar features that distinguish it from the inoculated variolous pustule. Its shape is circular, sometimes a little oval; but the margin is always well defined, and never rough or jagged; the center dips instead of being polarised, and is less elevated than the circumference.

Constitutional affection.

About the eighth day, when the vesicle is completely formed, the disease exhibits something of a constitutional influence; the arm-pit is painful, and there is perhaps a slight head-ache, shivering, lassitude, loss of appetite, and increase of pulse. These may continue in a greater or less degree for one or two days, but always subside spontaneously, without leaving any unpleasant consequence. During the general indisposition the vesicle in the arm

becomes surrounded with a circular inflamed halo or areola, about an inch or an inch and a half in diameter, which is the pathognomic proof of constitutional affection, how slightly soever the internal symptoms may show themselves. After this period the fluid in the vesicle gradually dries up; the surrounding blush becomes fainter, and in a day or two dies away imperceptibly; so that it is seldom to be distinguished beyond the thirteenth day from inoculation. At this time the vesicle hardens into a thick scab of a brown or mahogany colour; and if not separated antecedently by violence or accident, falls off spontaneously in about a fortnight, leaving the skin beneath perfectly sound and uninjured. The entire progress of the inoculation scarcely opens a door to any medical treatment whatever. No preparatory steps are called for, as in small-pox; and all that can be necessary is a dose or two of some aperient medicine if the constitutional indisposition should be severe or troublesome.

Gen. II. Spec. III. γ E. Vaccinia inserta. Inoculated cow-pox.

Therapia.

There is a variety of vaccinia, denominated DEGENERATE COW-POX by Dr. (now Sir Gilbert) Blane in his evidence upon this subject before the Committee of the House of Commons, of which the following may be regarded as the character. Produced by inoculation; vesicle amorphous or uncertain; fluid often straw-coloured, or purulent; areola absent, indistinct or confused with the vesicle; scab formed prematurely. The cause of this degeneracy has not yet been sufficiently pointed out; but it is now well ascertained that inoculation from this species will not prevent the small-pox; and hence a variety of mistakes in the early practice before the fact was discovered.

δ E. Vaccinia degener. Degenerate cow-pox.

Distinctive characters.

Cause of degeneracy not known.

Possesses no prophylactic power.

Vaccine virus seems to undergo a spontaneous alteration in a certain period of time, whatever be the caution with which it is preserved; but there are some circumstances that seem to favour this alteration more than others, although we know but little of the nature of these circumstances. Even in passing through the human subject in the form of inoculation it appears to be modified and to be rendered milder: for a person immediately inoculated from the affected cow uniformly suffers more

Vaccine virus undergoes a spontaneous change from various causes.

GEN. II. SPEC. III. Emphlysis Vaccinia. Cow-pox.

than one person inoculated from another. It has been proved however that the fluid loses nothing of its specific power after a certain number, and even a long series of transmissions from individual to individual; for cows have been inoculated with it in this state of repeated descent, and have exhibited the disease in all its natural violence. Yet if the second variety be a modification of this disease, and not a distinct eruption, it bears witness to a change in the qualities of the virus taking place in the animal itself from some undiscovered cause.

Genuine cow-pox has sometimes failed in preventing small-pox;

but still influences its character, and renders it milder.

It ought also to be stated that the genuine cow-pox itself has not proved a permanent prophylactic in particular habits or idiosyncrasies, of the nature of which however we know nothing. But the cases in which it has failed are very few; and in almost every instance the small-pox occurring afterwards seems to have been changed from its natural course, and rendered milder and of shorter duration; the pustule rarely exceeding the fifth day before it has begun to turn; and the fluid generally passing at once from an ichorous or limpid into a concrete or indurated state without the intervention of pus. While, therefore, the absolute infallibility of the prophylactic power of cow-pox inoculation is no longer to be maintained, enough still remains in support of its pretensions of being one of the most important discoveries in medicine, and one of the greatest blessings that has ever been conferred on mankind; as has been sufficiently proved in an admirable article published by the French Imperial Institute, and drawn up by three of its brightest ornaments, M M. Berthollet, Percy, and Halle, of the date of August 17, 1812.

Many cases of failure may be accounted for:

but by no means all.

A plurality of punctures not necessary,

For the failure of success in many hundreds of instances that have been triumphantly brought forward by its enemies, there is no difficulty in accounting; but there are others which are not to be disposed of in the same manner, and which irrefragably establish its inefficacy from causes that elude all explanation. It was at one time conjectured by our own national Vaccine Establishment that many of these cases of failure were to be ascribed to

GEN. II. SPEC. III. Emphlysis Vaccinia. Cow-pox.

the use of a single puncture alone, in consequence of which two or more punctures were recommended on each arm. This hypothesis, however, seems now to be abandoned; and indeed, after the numerous and cautious experiments upon the subject of inoculation for the small-pox by M. Camper, which have abundantly shown that a single effective puncture proves as secure, and produces as large a crop of pustules as any number up to seven, which was the highest he thought it worth while to try,* it is not a little singular that it should ever have been adopted: and the observation of Professor Thomson is far more worthy of attention. "I have not been able," says he, "to discover, after the most minute attention, that any difference of effect whatever in the modifying power of vaccination has depended upon the skill of the operator, or upon his peculiar mode of performing the operation."† The real merits of the case, however, are summed up with great candour and judgment in the following passage of a subsequent report of the public establishment just alluded to. "After every reasonable deduction, we are compelled to allow, that too many cases still remain on undeniable proof to leave any doubt that the pretensions of vaccination to the merit of a perfect and exclusive security in all cases against small-pox were admitted at first rather too unreservedly. Yet the value of this important resource is not disparaged in our judgment: for, after all, these cases bear a very small proportion to the number of those who are effectually protected by it."—Eight only are stated by the metropolitan stations out of nearly 67,000 vaccinated since the establishment of the board: and "we have undoubted proofs from experience, that where vaccination has been performed perfectly, small-pox occurring after it is almost universally a safe disease; and though ushered in by severe symptoms, has hardly ever

General merits of the case as given in a late report of the national Vaccine Establishment.

* Dissertatio de Emolumentis et optimo methodo Insitionis Variolarum. Groning. 1774.

† Historical Sketch, &c. p. 398.

GEN. II. SPEC. III. Emphlysis Vaccinia. Cow-pox.

failed to be cut short before it had reached that period at which it becomes dangerous to life."*

Cases of failure seem nevertheless progressively to increase.

There is some cause for alarm, however, in the information lately communicated by Dr. Gregory, physician to the Vaccine Hospital, that the table kept at this establishment manifests, that the prevalence of small-pox after vaccination is on the increase. "From this table it appears," says he, "that in the year 1810, the proportion of cases of small pox succeeding vaccination to the whole number of admissions was as one in thirty; in 1815 as one in seventeen; in 1819 as one in six; in 1821 as one in four; and during the year 1822 as one in three and a half."† This is, indeed, a fearful diminution of protective power. But as we have already noticed the wonderful loss of energy which the genuine virus of the cow undergoes in passing through the human subject in the form of inoculation even for the first time, it is possible that its increasing inertness may depend upon the innumerable transmigrations from individual to individual, that it has now sustained; and that we ought, at given periods, or after a given number of successive inoculations to return to the primary fountain for a recruit. The subject is well worthy of being followed up by a serious train of experiments.

Attempted to be accounted for, and a remedy proposed.

Singular case in which vaccination produced no influence on subsequent small-pox.

The only case that has ever occurred to myself in which vaccination has not seemed to produce any influence whatever upon the character of subsequent small-pox, is one I was attending while writing the first edition of this work. The patient was Mr. Alfred Phillips, of Christ's College, Cambridge, about twenty years of age, who had been vaccinated when an infant by Dr. Jenner. The eruption was of the distinct variety, but, for this variety, as full as possible over the whole of the face, body, and limbs; the fever had been very considerable, and every part was severely

* Report of April 12, 1821.

† Cursory Remarks on Small-pox as it occurs subsequent to Vaccination, &c. Medico-Chir. Trans. Vol. XII. part II.

hot, sore, and tumefied, so that the eyes were nearly closed, and always opened with difficulty in the morning: and the spaces between the pustules, which, however, were few and small, were of a fiery red. The pimples made their appearance on the third day from the accession of the fever; they ripened regularly, and were, on the eighth day of eruption, very large, and a few of them just beginning to turn brown on the apex, so that it is not necessary to follow up the description any further.

GEN. II. SPEC. III. Emphlysis Vaccinia. Cow-pox.

It is possible that there are other animal poisons which may in like manner act as a prophylactic against small-pox, and destroy the susceptibility to this disease in the human frame: for the same effect seems to have followed upon inoculation with the sanious discharge from the heels of horses afflicted with the disease called *grease*. And Dr. Jenner, who, on his first directing his attention to the nature and effects of cow-pox, applied himself also to this subject,* felt persuaded at that period that the two fluids of cow-pox and of grease from the heel of a horse, are precisely the same, and capable of affording a like emancipation. He conceived the sanious fluid of the grease to be the original disease, and the cow-pox in the cow itself to be nothing more than a casual inoculation produced by the cow's lying down in a meadow where the affected horse had been previously feeding, and her udder coming in contact with the discharge which had dripped on the grass and lodged there: and he endeavoured to show the identity of the fluids by the identity of their effects in respect of the small-pox.—So far as can be judged from the few cases before us, performed indeed in different countries, but still few in respect to the number necessary to establish a positive proof, grease-pox seems to have succeeded as well as cow-pox; and hence blacksmiths and farriers who have been infected by the grease have been for ages considered as generally unsusceptible of variolous contagion; and it is possible therefore that there may be, as already

Other animal poisons may possibly also possess a like power,

as grease in the heels of horses, supposed by Jenner to

be the source of cow-pox, but erroneously.

* Inquiry into the Causes and Effects of the Variolæ Vaccinæ, pp. 27, 37.

GEN. II. SPEC. III. Emphlysis Vaccinia. Cow-pox.

observed, other animal poisons possessed of a similar power. But it is not necessary to search for them; none can surpass and none be expected to equal, the cow-pox process in respect to cleanliness, simplicity, and little disturbance to the system; while on the contrary, the mere idea of using the matter of grease from the horse's heel, excited from the first so deep and extensive a disgust that cow-pox inoculation had nearly fallen a sacrifice from the supposed union of the two diseases. It was fortunate, therefore, for Dr. Jenner, and the triumph of his discovery, that a minuter attention to the subject gave sufficient proof that there was no foundation for his opinion: and that, whatever be the prophylactic power of the matter of the disease called grease, this disease is by no means the origin of the natural cow-pox, and has no connexion with it.

But other prophylactics unnecessary.

SPECIES IV.

EMPHLYSIS VARICELLA.

Water-Pox.

VESICLES SCATTERED OVER THE BODY; GLABROUS; TRANSPARENT; PEA-SIZED; IN SUCCESSIVE CROPS WITH RED MARGINS; PELLICLE THIN; ABOUT THE THIRD DAY FROM THEIR APPEARANCE BURSTING AT THE TIP, AND CONCRETING INTO SMALL PUCKERED SCABS, RARELY LEAVING A CICATRIX.

GEN. II. SPEC. IV. THE water-pox appears under the three following varieties, distinguished chiefly by the shape of the pimple:

α Lentiformis. Chicken-pox. — Vesicles lentile-shaped, or irregularly circular, flattened at the top; fluid at first pellucid, then whitish; afterwards straw-coloured.

ε Coniformis. Swine-pox.	Vesicles acuminated; fluid pellucid throughout.	GEN. II. SPEC. IV. Emphlysis Varicella. Water-pox
γ Globularis. Hives.	Vesicles globular and larger; fluid at first whey-coloured, afterwards yellowish.	
δ Corymbosa. Clustering water-pox.	Vesicles clustering upon a common, but broader base; redder at the first, and later in appearance; febrile symptoms outlasting the eruption.	

Several of the varieties are sometimes intermixed, and the fluid about three days after the eruption occasionally becomes thickish as well as yellowish in the first and third, and possesses a purulent appearance;* whence, in various instances, they have been mistaken for small-pox. The eruptive fever in chicken-pox is also sometimes considerable; and hence, another cause of the same mistake, a mistake that has not unfrequently led to serious and even fatal consequences, by putting those who have had the disease off their guard against variolous infection. And where this error has been committed, and the small-pox has afterwards been received, it has led to a second mistake, by inducing the patient to believe that he has had the small-pox a second time.

Varieties occasionally intermixed: and sometimes mistaken for small-pox. Hence occasionally serious evils.

The two diseases, indeed, were long confounded by physicians of the highest character: they were regarded as alike by Morton; and even in Sauvages, varicella is described under the name of variola *lymphatica*.† This, however, is a subject we shall further examine into under SMALL-POX.‡ Suffice it for the present to observe, that varicella is *adequately* ascertained to originate from a peculiar specific contagion; and the characters by which it is sufficiently distinguished from small-pox are that its fluid, except in a few anomalous cases, is limpid throughout; and that as early as the third or fourth day from the

The two diseases formerly often confounded. Chicken-pox distinguished from small-pox.

* Frank, De Hom. Morbis, Tom. II. p. 270.

† See upon this subject the remarks under Empyesis Variola or Small-pox, Gen. III. Spec. I. of the present Class and Order.

‡ See Gen. III. Spec. I. of the present Order Empyesis Variola.

GEN. II. SPEC. IV. Emphlysis Varicella. Water-pox

eruption it concretes into crusts, which are thrown off without indenting the cutis: while in small-pox the fluid consists of pus as soon as formed, and does not concrete into crusts till the seventh day, and often much later. Like the small-pox it does not attack the same person a second time, excepting in a few anomalous constitutions, that establish rather than oppose the general rule. "I wetted a thread," says Dr. Heberden, "in the most concreted pus-like liquor of the chicken-pox which I could find, and after making a slight incision, it was confined upon the arm of one who had formerly had it: the little wound healed up immediately, and showed no signs of any infection."* It is singular that Professor Frank should have confounded this complaint as well as the horny small-pox, with pemphigus, and made them modifications of this disease† as we shall have occasion to observe hereafter.

Confounded by Frank with other eruptions.

Fever often slight;

In the ordinary course of the first three varieties the pyrectic symptoms are so slight as not to require medical attention: and sometimes there is no fever whatever. The eruption makes its appearance chiefly on the back, and is often confined to it; and the general number of vesicles vary from 20 to 200. I have sometimes, however, known the eruption preceded by almost as severe febrile signs of shivering, sickness, head-ache, and pain in the limbs, as that of small-pox, but the symptoms have always subsided when the vesicles have appeared.

but not always.

Treatment

In this case an active purge should be administered, succeeded by some diluting drink; and the patient should be confined to a quiet, spacious, and well ventilated room, with a cool dress, till the febrile symptoms have left him.

Corymbose variety copied from Heberden.

For the fourth variety I am entirely indebted to the observant and indefatigable eye of Dr. Heberden; for it has never occurred to me, nor is it to be found in the table of the Nosologists. "This disorder," says he, "is preceded for three or four days by all the symptoms which fore-run the chicken pox, but in a much higher degree.

* Medical Transactions, Vol. I. Art. XVII.

† De Cur. Hom. Morb. Epit. Tom. III. p. 264.

On the fourth or fifth day the eruption appears, with very little abatement of the fever; the pain likewise of the limbs and back still continues, to which are joined pains of the gums. The pocks are redder than the chicken-pox, and spread wider, and hardly rise so high, at least not in proportion to their size. Instead of the little head or vesicle of the serous matter, these have from four to ten or twelve. They go off just like the chicken-pox, and are distinguished from the small-pox by the same marks: besides which the continuance of the pains and fever after the eruption, and the degree of both these, though there be not above twenty pocks, are, as far as I have seen, what never happen in the small-pox."*

GEN. II. SPEC. IV. Emphlysis Varicella. Water-pox.

SPECIES V.

EMPHLYSIS PEMPHIGUS.

Vesicular, or Bladdery Fever.

VESICLES SCATTERED OVER THE BODY; TRANSPARENT; FILBERT-SIZED; WITH A RED INFLAMED EDGE, BUT WITHOUT SURROUNDING BLUSH OR TUMEFACTION; ON BREAKING DISPOSED TO ULCERATE; FLUID PELLUCID, OR SLIGHTLY COLOURED; FEVER A TYPHUS.

GEN. II. SPEC. V. Origin and import of the specific term.

THE term pemphigus is derived from the Greek πεμφιξ, "flatus, bulla," and hence *inflation*, bladder, bubble. The idea of flatulency, however, is seldom connected with this disease in modern medicine, though very generally in ancient. The term, in the sense in which it is now commonly understood, was, perhaps, first employed by Sauvages; and has since passed into common use. It is

* Med. Trans. ut suprà.

GEN. II. SPEC. V. Emphlysis Pemphigus. Vesicular, or bladdery fever.

still doubted by many, whether pemphigus is entitled to be considered as a distinct and idiopathic disease; and whether all its varieties and modifications may not resolve themselves into certain peculiarities of erysipelas or pompholyx, the latter of which consists of similar vesicles, or bullæ, without fever; or into mere symptoms of typhus or plague. Gulbrand appears to have been of the former opinion; and hence he has denominated the disease erysipelas *vesiculare*:* Dr. Cullen seems to have been of the latter at the time of drawing up his definition, and still later, at that of drawing up his First Lines, in consequence of which he dismisses it in a single paragraph as an affection concerning which he can say nothing. But the fourth edition of his synopsis contains a subjoined note, which intimates that his opinion was altered in consequence of his having seen a patient shown him by Dr. Home, and who was labouring under this disease, as an idiopathic affection, at the time. And when to this we add the authority, not merely of the earlier writers, Bontius, Seliger and Langhans, but of Frank, Withers, Clarkson, Christie, Ring, Braune, and Dr. Stewart of Aberdeen, it would be unpardonable not to allow it a distinct place in a general system of nosology.

Whether an idiopathic disease; a variety of erysipelas, or pomphylix?

Upon a careful review it appears to offer the three following varieties, which run parallel with those of Dr. Willan, though not exactly taken from him:—

« Vulgaris. Common vesicular fever.	Vesicles appearing on the second or third day, occasionally not till the fifth or sixth; in successive crops; often extending over the mouth and intestinal canal; fluid, on bursting, yellowish; some of the vesicles livid, with a livid base.

* Act. Soc. Med. Hafn. Tom. I.

β Glandularis. Glandular vesicular fever.	Preceded by tumefaction of the neck and throat; vesicles chiefly seated on the fauces and conglobate glands; occasionally producing abscesses; highly contagious.	GEN. II. SPEC. V. Emphlysis Pemphigus. Vesicular or bladdery fever.
γ Infantum. Infantile vesicular fever.	Vesicles irregularly oblong, with livid edges and commonly flattened tops; appearing successively on different parts of the surface in infants a few days after birth; on breaking, purplish.	

We shall have occasion to observe, under VARIOLA, that Frank, who made a different division of pemphigus, undertook to include under it varicella, crystalline, and horn-pox, and many of the forms of disease which have been denominated spurious small-pox.

α E. Pemphigus vulgaris. Common vesicular fever.

The FIRST VARIETY, or common pemphigus, is the pemphigus *major* of Sauvages, a very marked case of which is given in a communication of Dr. David Stewart to Dr. Duncan of Edinburgh.* It appeared on a young private of the seventy-third regiment, who had for a fortnight or three weeks antecedently been unwell from a sudden retrocession of measles produced by an exposure to cold, and afterwards to a damp unventilated apartment. He was received into the hospital at Aberdeen April 15, at which time he complained of headache, sickness, oppression about the præcordia, thirst, sore throat, difficulty of swallowing; his tongue was foul, his skin hot, pulse from 110 to 120, rather depressed. The whole surface was interspersed with vesicles of the size of an ordinary walnut; especially the breast and arms. In the interstices the appearance of the skin was

Description

* Edinb. Med. Comment. Vol. VI. p. 79.

GEN. II. SPEC. V. α E. Pemphigis vulgaris. Common vesicular fever.

natural; and the distance from one vesicle to another was from half an inch to an hand's breadth or more. The disease did not seem to be contagious, as the patient was a solitary instance of it, both where he resided before and after his reception into the hospital. His

Treatment.

chief medical treatment consisted in bark and port-wine with acidulated drinks: many of the vesicles broke, and discharged a bloody and most offensive ichor; the cutis, upon a rupture of the vesicles, was for the most part sound, of a deep red hue, and in some places livid. A new cuticle was gradually produced: and on April 27, being twelve days from his reception into the hospital, he was dismissed perfectly cured.

General remarks.

In this case the bullæ do not seem to have reached below the throat in an internal direction; nor lower than this region in the severer case described by Seliger. In the first instance, the vesicles appeared abruptly, and had bursted and were healed in seven or eight days. In Seliger's case they issued more gradually, and in successive

Singular anomalies.

crops, ran through a longer period, and were not healed till the twenty-first day.* Dr. Frank gives a case of a like kind occurring to him at the time of writing his Epitome, that continued to migrate over different parts of the body for sixteen days, accompanied with difficulty of breathing, subsultus and pain at first in the region of the liver, but afterwards in the chest, assuming the guise of peripneumony.† In a case apparently of the same kind, published by Dr. Dickson in the Transactions of the Royal Irish Academy, there is evident proof of their having extended from the fauces throughout a considerable part of the alimentary canal: here also the vesicles appeared in successive crops, especially on the ninth, tenth, and thirteenth day, each crop continuing four or five days before it bursted; the fever was accompanied with delirium, but abated on the fifteenth day on the

* Ephem. Act. Nat. Cur. Dec. I. Ann. viii. Obs. 56.

† De Cur. Hom. Morb. Epit. Tom. III. p. 266.

appearance of the catamenia, and the bullæ healed in succession without any trouble.* None of these appear to have been contagious.

Gen. II. Spec. V. α E. Pemphigus vulgaris. Common vesicular fever.

I cannot speak of pemphigus from personal knowledge; but in all the above instances the fever was of a low or typhous type; and the disease seems to have approached the nature of erysipelas, and was treated successfully by the means usually employed for the latter.

β E. Pemphigus glandularis. Glandular vesicular fever.

For what little knowledge we possess of the SECOND or GLANDULAR VARIETY, the contagious pemphigus of Dr. Willan, we are chiefly indebted to Dr. Langhans, a Swiss physician, who observed it in the spring and through the summer of 1752 in the low-lands of his own country.† It commenced with a sense of tension in the fauces, and a slight pain spreading behind the ears to the anterior part of the thorax, accompanied with the symptoms that mark the first stage of fever, but not succeeded by a hot fit. A greenish bilious matter was sometimes thrown up from the stomach, and the pulse was feeble. The neck swelled externally and internally about the fauces, bullæ were observed of the size of a filbert, producing little pain, and containing a yellow ichor of an offensive smell. Soon afterwards similar vesicles were found scattered sparingly over the body and limbs, which, if not broken or opened, collapsed in the second, third, or fourth day, and dwindled into whitish crusts. During this period the tumour of the neck often suppurated, or other suppurating tumours formed in some of the conglobate or conglomerate glands, as the parotid, axillary, or inguinal; and the virus of the disease being thus discharged by different outlets on the surface of the body, the patient recovered. But if, before this translation to the surface, there were a sense of weight and anxiety about the thorax, a large abscess was formed internally, and on its bursting the patient died from suffocation. Or if the matter, lodged in the external vesicles, were by accident repelled before

Description.

* Vol. I. 1787. † Act. Helvet. Tom. II. p. 260.

GEN. II. SPEC. V. 5 E. Pemphigus glandularis. Glandular vesicular fever.

any glandular suppuration took place, he died almost as suddenly.

M. Langhans compares this disease to syphilis, but apparently with little reason; and Dr. Cullen and Dr. Frank with not much more to rosalia *paristhmitica*. The cause, like that of the sweating-sickness, is altogether unknown, and like this disease also, after having ravaged with great fatality for a certain but a shorter period of time, happily for Switzerland, and perhaps for all Europe, it vanished, and has been heard of no more. Sauvages, indeed, quotes a description of pemphigus from Thiery, which, by some writers, has been supposed to be the same; but the account is so brief, and at the same time so loose and indistinct, that it is impossible either to arrange or reason about it.

Has disappeared like the sweating-sickness.

Was epidemic, contagious, and very fatal.

The glandular pemphigus of Switzerland, according to M. Langhans, was both contagious and epidemic; so contagious, indeed, as to spread through numerous families with great rapidity, and so malignant that all persons affected by it died. This last assertion, however, compared with what follows, appears to be a little overcharged; for the author proceeds, as already observed, to point out under what circumstances patients recovered from it; and lays down a remedial process, which, "though at first," says he, "I employed it with anxiety and hesitation, I can now with pleasure recommend to all persons labouring under the complaint with the most sanguine hope that it will effect a speedy cure."

Treatment.

This successful practice, as in the sweating-sickness, consisted in exciting a strong determination to the surface by active sudorifics; and at the same time supporting the strength with camphor, and other cardiacs. He commenced his process, however, by venesection, which was sometimes repeated, and, where there was danger of an abscess in the lungs, unquestionably with great judgement.

2 E. Pemphigus infantum. Infantile vesicular fever. Description.

The INFANTILE PEMPHIGUS appears, as already noticed, most commonly a few days after birth; but in one case adverted to by Dr. Willan, as late as ten months

after this period. The vesicles show themselves on the neck, upper part of the breast, abdomen, groin, scrotum, and inner parts of the thighs. They arise successively, break, and expose a surface that heals with difficulty; and more generally enlarges its boundary, and wears out the little patient with pain, restlessness, and want of sleep. Warm cordials, as camphor and the aromatic confection, with a little port-wine-negus, form the best means of supporting the strength, and giving success in the struggle: and laudanum must be had recourse to where the want of sleep requires it.

GEN. II. SPEC. V. γ E. Pemphigus infantum. Infantile vesicular fever.

Curative process.

SPECIES VI.

EMPHLYSIS ERYSIPELAS.

St. Anthony's Fire.

VESICATION DIFFUSE; IRREGULARLY CIRCUMSCRIBED; APPEARING ON A PARTICULAR PART OF THE BODY, CHIEFLY THE FACE, ABOUT THE THIRD DAY; WITH TUMEFACTION, AND ERYTHEMATIC BLUSH: FEVER USUALLY ACCOMPANIED WITH SLEEPINESS, OFTEN WITH DELIRIUM.

In describing the genus erythema, I endeavoured to point out a distinctive line between that inflammation and erysipelas, which are so often intermixed and confounded even by good writers; and observed that the first bears the same analogy to phlegmon, as the last to small-pox. Phlegmon is local inflammation tending to suppuration; erythema local inflammation tending to vesication: small pox is an idiopathic fever producing a phlegmonous efflorescence; erysipelas an idiopathic fever producing erythematic efflorescence. Small-pox is always conta-

GEN. II. SPEC. VI. Distinction between the present disease and erythema. Illustrated.

GEN. II. SPEC. VI. Emphlysis Erysipelas. St. Anthony's fire.

gious; erysipelas occasionally so: phlegmon and erythema have no such tendency.

The varieties of this species are very indifferently given by different writers; by many of whom they are multiplied most unnecessarily. Dr. Cullen makes even the herpes *Zoster*, or shingles, a variety; but this is strangely to confuse simple cutaneous diseases with idiopathic fevers. For that erysipelas, when genuine, is an idiopathic fever dependent upon or productive of a specific virus is clear, because it has often, though not generally, been found contagious, and is capable of propagation by inoculation. "When the acrimonious lymph," observes Dr. Willan, "contained in the phlyctænæ or vesications of a genuine erysipelas, is inoculated or casually applied to any slight wound in a person otherwise healthy, it produces febrile symptoms, with a red and painful but diffuse swelling, analogous to that of the disease from which the virus was derived."* And he has added a case, in which the mother of a young girl severely affected with this disease appears to have received it in consequence of having nursed her.

Often confounded with cutaneous diseases.

Distinctive characters.

Is contagious.

Facts in proof of this offered by Willan:

by Wells:

Dr. Wells has strengthened the doctrine of its contagious property by a variety of facts and cases that can scarcely, I should think, be read by any one without conviction.† One of his examples extends to four individuals, who received the disease in succession after direct contact or near approximation with each other; and another gives us a like chain of not less than six in descent, all of whom, indeed, he did not attend personally, but the history of whom, as communicated to him by one of the affected, was confirmed by Dr. Pitcairn, who had been consulted by two of the rest, and was privy to the general fact. Dr. Pitcairn also communicated to Dr. Wells the following highly important statement in addition: "A lady immediately after delivery was attacked with a fever

by Pitcairn:

* On Cutaneous Diseases, p. 514.

† Transact. of Soc. for the Improvement of Med. and Chir. Knowledge. Vol. II. p. 213.

which was accompanied with an affection of her skin somewhat like erysipelas; her child, about three days after its birth, was seized with that species of erysipelas the French call *la gelûre*, which first appeared about the pudenda, and afterwards extended itself to other parts of the body, among the rest to the face. Both the lady and her child died after a few days' illness; and about eight days after the death of the child, the lady's mother and servant maid, both of whom had attended it during its illness, were attacked with erysipelas of the face, from which both of them recovered." The opinion of Dr. Baillie, as communicated to Dr. Wells on another occasion, is to the same effect; to which Dr. Baillie seems to have been more especially led, by having observed in "a part of the years 1795 and 1796, that the erysipelas of the face was much more frequent in St. George's Hospital than he had ever before known it to be; that many persons were attacked after they came into the hospital, and that the number in a particular ward was much greater than in any other."

GEN. II. SPEC. VI. Emphlysis Erysipelas. St. Anthony's fire.

and by Baillie.

This last remark seems to give some countenance to the further opinion, that erysipelas becomes occasionally an epidemy, or operates through the medium of the atmosphere, as well as by direct contact: though whether the atmosphere, in this case, be impregnated with the specific miasm of the disease, or merely predisposes the body to a more ready generation of it, has no more been determined than in the case of various other exanthems that evince a like power. Dr. Parr asserts broadly, "we have four times seen it epidemic; and more than once we have had reason to suspect that it was communicated by infection."*

Probably at times an epidemy.

At first sight it might seem easy from these accounts to subdivide erysipelas into the two varieties of contagious and uncontagious; but as it is most probable that the power of communication depends alone upon the peculiar diathesis of the person who receives it, as being endowed

* Dict. in verbo.

GEN. II. SPEC. VI. Emphlysis Erysipelas. St. Antho-ny's fire.

with a susceptibility of the disease not possessed by others, we can make nothing of this discrepancy: and shall hence examine it under the following varieties founded upon other circumstances:

α Locale. Local erysipelas.	Limited to a particular part; the cuticle raised into numerous aggregate, distinct cells; or the cells running into one or more blebs or large blisters.
β Erraticum. Erratic erysipelas.	Travelling in successive patches from part to part: the earlier patches declining as new ones make their appearance.

α E. Erysipelas locale. Local erysipelas. Distinctive characters. Description

The LOCAL ERYSIPELAS generally exhibits itself on one side of the face, or on some one of the limbs. In the former case the disease begins with coldness and shiverings, which alternate with irregular flushes of heat, and other symptoms of pyrexy. Dull aching pains are felt in the head, neck, and back. The swelling usually appears in the course of the second night or the third day; though I have sometimes known it take place within a few hours after the attack; the redness disappearing when pressed upon by the finger, but returning as soon as the pressure is removed. The eruption fixes itself on one side of the nose, or the cheek, temple, or forehead: is of a dark red colour, smooth and soft, and attended with a sensation of heat and tingling. The redness and swelling extend gradually over the affected side of the face; and spread, in some cases, to the scalp, and to the side of the neck or the upper part of the breast. Hence the face appears much disfigured; the mouth is drawn to one side; the eye-lids are turgid, and close up the eye, the fever increases, and is often attended with delirium. On the fourth and fifth day vesications arise on different parts of the diseased surface, especially about the centre; but with an increase rather than a diminution of the fever. The vesicles or bullæ are of different sizes, and have an

irregular base. The fluid contained in them is at first clear and watery: it afterwards becomes straw-coloured or opake, occasionally slightly livid, without losing its transparency. The cuticle gives way in a few places, and the fluid oozes through the cracks. About the eighth or ninth day, and sometimes sooner, the redness changes to a brown or yellowish hue, the bullæ subside, and the cuticle dries and desquamates or scales off. Occasionally both sides of the face are affected at the same time; though generally the morbid half is separated from the sound by an exact line drawn across the forehead, down the middle of the nose to the chin. The fever subsides about the eighth or ninth day, but sometimes after its cessation it returns suddenly with as much violence as at first, and continues two or three days longer. A sanious fluid approaching the nature of pus, and which by De Preval* and other writers seems to have been mistaken for pus itself, is sometimes found in parts of the vesication: and from this circumstance Dr. Cullen has distinguished one variety of the disease by the name of erysipelas *phlegmonodes*: and has been copied by Dr. Willan. But a genuine phlegmon is never met with in erysipelas. "A circumscribed cavity," says Mr. Pearson, "containing laudable pus is never seen in the legitimate erysipelas. Where a purulent effusion happens in any considerable degree, it affords when the part is examined, a sensation similar to that excited by a quagmire or morass. In that sort of suppuration, which sometimes supervenes to erysipelas, the cellular membrane suffers great injury, and not uncommonly the part is in a gangrenous condition."†

Gen. II. Spec. VI. α E. Erysipelas locale. Local erysipelas.

Erysipelas Phlegmonodes of Cullen.

When the head is the seat of disease, it occasionally swells to an enormous magnitude, and, according to De Roma, the malady has proved fatal.‡ The disturbance of the constitution is less violent when the erythema appears in the extremities. The limbs most affected are the legs, in which, probably from their depending situation, the

Prognosis.

* Journ. de Med. Tom. LI. p. 315.—Eph. Nat. Cur. Dec. II. Ann. IV. p. 52.

† Principles of Surgery, § 269.

‡ Consult. Med.-Chirurg.

GEN. II. SPEC. VI. α E. Erysipelas locale. Local erysipelas.

vesications fill rapidly and break within twenty-four hours from their first appearance. Salmouth relates a case in which the intumescence extended over the entire frame:* but this is extremely rare, excepting under the second or migratory form, in which it trails over different parts in succession, till the whole body has been affected.

β E. Erysipelas erraticum. Erratic erysipelas.

In the ERRATIC VARIETY, the complaint usually, and particularly in adults, begins its attack in the face, and spreads in succession to the extremities, the patch first formed healing as fresh ones appear below. Sometimes, however, other parts are seized first; and perhaps more frequently so when this variety shows itself in infants; for here the parts about the navel are usually first affected, and the disease winds downward to the sexual organs, which are often very considerably tumefied and inflamed.

Description.

Infantile erysipelas commonly so called, what.

What, however, is usually denominated the infantile erysipelas, is more commonly a variety of gangrenous erythema, produced, in many instances, by want of cleanliness, pure air, and nutritive food. The inflammatory blush soon assumes a livid hue, and is sometimes covered with or surrounded by petecchiæ: the cuticle is separated to a considerable extent from the cutis, breaks, and exposes a foul and ulcerating surface that almost immediately passes into a state of gangrene. In some instances, nevertheless, these cutaneous efflorescences are probably accompanied with a true erysipelatous fever: for in lying-in hospitals the disease is said to have proved occasionally contagious.

Erysipelas œdematodes, and e. gangrænosum of Willan, what.

The erysipelas *œdematodes*, and e. *gangrænosum* of Dr. Willan, appear to be misnamed, and consequently misplaced. They are more accurately erythemata, and have already been described under the species erythema *œdematosum*, and e. *gangrænosum*.

Causes, and pathology.

The usual causes are cold, intemperance, suppressed perspiration, and the other common excitements of fever operating upon an erythematic diathesis, and producing therefore this peculiar efflorescence in connection with

* Gent. t. Oss. 3.

the febrile attack. In *almost* every instance, there is evidently a diminished vascular action; and hence we meet with the disease far most frequently in persons of delicate habits, women, children, and those who have long resided in warm climates. In one instance it has occurred to me in a strong hearty man, of plethoric form and sanguineous temperament, well known to the world as a public character; but in this case the diet had, from boyhood, been exclusively that of vegetables from an extraordinary disgust for animal food of all kinds.

GEN. II. SPEC. VI. β E. Erysipelas erraticum. Erratic erysipelas.

It is also said to have occurred in consequence of repelled gout,* suppressed menstruation,† and insolation, or exposure of the head to the mid-day rays of the summer sun.‡ It may possibly in some idiosyncrasies be produced by indigestible or rancid foods; and especially by shell-fishes which disagree with the stomach; though there is reason to believe that in many cases of this kind erysipelas has been mistaken for urticaria, or roseola.

Sometimes metastatic. Other occasional causes.

It is necessary the limitation in the preceding paragraph but one should be attended to: I mean that in *almost* every instance there is a diminished vascular action; for it has occasionally happened, and especially where the disease has occurred as an epidemy in some of the high and healthy villages of North Britain in the heat of a dry summer, or autumn, that, instead of diminished vascular action, there has been such a degree of entony and caumatic fever as to call for free venesection from the first, and of this form a few striking examples have been communicated to the author since the former edition of the present work. So, on the contrary, the small-pox and measles, though ordinarily accompanied with cauma, occasionally evince a typhous type, and demand a tonic plan of procedure.

Occasionally accompanied with high entonic action. Illustrated.

The mode of treatment may be expressed in few words. Venesection was formerly recommended as a part of the ordinary plan, and has been so of late by a few writers.

* Stoll, Rat. Med. v. p. 436. † Alberti, Jurisprud. Med. III. 796.

‡ Pelargus, Med. Jahrgänge, v. 185.

GEN. II. SPEC. VI. Emphlysis. Erysipelas. Treatment.

Yet this is to act without discrimination, and to mistake the exception for the general rule. Passing by the modification just adverted to, and those occasional congestions in the larger organs, and especially in the head, which even in typhus, and still more in such forms of erysipelas, demand a prompt and repeated use of blood-letting, I can conceive very few ordinary cases in which the lancet has a chance of being serviceable, while the application of leeches always exasperates the efflorescence. As a general plan, we should first cool the body by gentle laxatives, and instantly have recourse to a tonic plan. The bark given largely, as long since warmly and judiciously recommended by Bromfield* and Colly,† has rarely failed of success. Dr. Fordyce was in the habit of giving it, in a dangerous state of the disease, in the proportion of a drachm of the powder every hour. He tried it for twenty years and with growing confidence. Where, however, there is much evening or night exacerbation, it may temporarily be dropped for some warm diaphoretic, as camphor, with small doses of James's powder, or the spirit or compound spirit of sulphuric ether, in saline draughts made with the carbonate of ammonia. If the head be much affected it should be lightly covered with linen wetted constantly with vinegar and cold water, or equal parts of water and the solution of acetated ammonia: and, if the vesications ooze, they should be frequently dusted with finely powdered starch, or a powder consisting of half starch and half calamine. The diet should be light and of easy digestion. Opiates have rarely succeeded in procuring sleep; and have generally added to the mental irritation.

* Medical Communications, II. 4 [illegible] H. H. S.

GENUS III.

EMPYESIS.

Pustulous Exanthem.

ERUPTION OF PHLEGMONOUS PIMPLES; GRADUALLY FILLING WITH A PURULENT FLUID; AND TERMINATING IN THICK SCABS, FREQUENTLY LEAVING PITS OR SCARS.

GEN. III. Origin of generic term.

EMPYESIS is a term of Hippocrates, and is to be found in the fifth book of his Aphorisms. It is derived from the Greek εμπυοω, or εμπυεω, "suppuro." The Greek writers also use, and perhaps more generally, ecpyésis, from εκπυοω, of similar meaning. The same distinction between the terms is made in the present system as between emphlysis and ecphlysis: the former being limited to signify pustular eruptions produced by *internal* and febrile affection, and the latter to signify those that are merely cutaneous or *superficial*, or with which *internal affection is not necessarily* associated.

The genus EMPYESIS contains not more than a single species that has yet been discovered, and that is,

EMPYESIS VARIOLA. SMALL-POX.

SPECIES.

EMPYESIS VARIOLA.

Small-Pox.

PUSTULES APPEARING FROM THE THIRD TO THE FIFTH DAY; SUPPURATING FROM THE EIGHTH TO THE TENTH: FEVER A CAUMA: CONTAGIOUS.

GEN. III. SPEC. I.

History.

Probably not known to the Greeks or Romans.

Known in Asia earlier than in Europe.

Inoculation for it practised immemorially in China.

Conveyed from India to Arabia: and thence to the Levant and Europe generally.

WHEN the small-pox first made its appearance in the world we know not. There is no substantial ground for believing that the disease was known to the Greeks or Romans. It has been thought, indeed, by some persons, that the former have glanced at it under the name of anthrax or anthrace;* but the idea is too wild for serious refutation. It is far better ascertained that it existed in Asia, and especially in China, for an incalculable period before it was known in Europe; and from the accounts of the Jesuits, to which we shall have to refer more particularly presently, it is highly probable that the art of inoculation was practised throughout the Chinese empire, before the natural contagion had reached the European shores. About the middle of the sixth century† it is supposed to have been conveyed by trading vessels from India to Arabia; and there is no question that the triumph of the Arabian or Saracenic arms introduced it from Africa into the Levant, Spain, and Sicily.

Pathognomic signs.

No exanthem so much affected by accidents.

The pathognomic characters of the genuine small-pox are pus in the eruptions, and a power of propagating itself both by contagion and inoculation. Perhaps, however, there is no exanthem that is so much affected by accidental influences as the small-pox. Idiosyncrasies of various

* Hahn, Variolorum Antiquitates è Græcis eruta, 1734.

† Mead, De Variolis, p. 3.

kinds seem to take off all predisposition to the disease, and to render the body inert to its virus; so that many persons possess a natural exemption, and pass through life without ever suffering from it. There are other changes introduced into the constitution from numerous causes, which, though they do not take off all predisposition to the disease in every individual to whom they are applied, afford an entire exemption in many cases, and exercise so controlling a power in others, that the general character of the disease, whenever it makes its attack, is greatly modified, and, for the most part, greatly mitigated; so that the accompanying fever is considerably less violent, the secreted fluid instead of being a creamy pus, is a limpid ichor, desiccating in three or four days and so far imperfect in its elaboration, as to be less capable of propagating itself by contagion or inoculation, or of affording an absolute security against a re-production of the disease in future: whence many persons, from the writings of the Arabians to those of our own day, are said to have suffered from small-pox not only twice, but even three or four times in succession. In these accounts, mistakes have, perhaps, often been committed as to the species or even genus of the eruption; but in various instances the disorder has been so narrowly watched, and the judgement of the physician who has described it been so sound and unimpeachable, as to leave no fair ground for doubt upon the subject.

GEN. III. SPEC. Empyesis Variola. Small-pox.

Hence some naturally insusceptible of the disease.

Others modify and mitigate it.

Hence often a less elaborate fluid secreted, and less capable of protecting against future attacks.

Whence many are said to have had repeated attacks.

Of the nature of the constitutional peculiarities that are thus capable of controlling the exanthem, and deflecting it from its ordinary course, we know nothing; and, of the causes themselves, which appear to be numerous, we know only a few. The virus of cow-pox introduced into the system is now satisfactorily ascertained to be one of these causes, and apparently one of the most powerful. In most cases it affords, as we have already seen, an entire exemption; and where it does not altogether take off the predisposition, it generally succeeds in giving the disease that modified and mitigated character which has been just noticed. The virus from the ulcerated heels of horses

Of the nature of these constitutional changes we know nothing: of the external influences only a few.

Virus of cow-pox is one of these: perhaps the most powerful.

Virus of grease in

GEN. III. SPEC. Empyesis Variola. Small-pox.

horses' heels appears to be another.

labouring under the disorder called grease,* seems also capable, as we shall observe hereafter, of producing a similar control. And as in most of the more extensive epidemies of small-pox, in every age since its first appearance, we have had numerous examples of such modified and imperfect eruptions, varying in almost every diversity of manner from each other, as well as from the regular pustules, but evidently produced by associating with patients affected with the last, and not unfrequently by inoculation itself from pure pus—examples in which neither of these causes have been present—we are compelled to admit that there are numerous other causes existing, perhaps other diseases existing as causes, to which the bodies of those who exhibit such modifications or anomalous and imperfect sorts have been previously exposed, and are indebted for so modifying a control, of which also, at present, we know nothing.

Grounds for a belief of other causes though unknown.

Rhazes has given numerous examples of these diversities or aberrations of small-pox, or Al-gridi as he denominates them, though the more common name was Aljedder: and hence the remarks of John of Gaddesden, "notandum quòd variolæ sunt duplices, propriæ et impropriæ."† The IMPROPRIÆ it is often difficult to follow up or arrange in consequence of their discrepancies, and especially their resemblances to other kinds of eruption. More commonly they approximate the form and general character of pemphigus or varicella (chicken-pox,) and have no doubt often been mistaken for the one or the other, especially the latter, of which the severe variolous epidemies that have of late years, after a long dormancy, spread over Edinburgh,‡ Caithness-shire and various other parts of Scotland, as well as over many parts

Hence Gaddesden's v. propriæ and impropriæ.

The last discrepant, and hence difficult to follow up.

* Jenner, Inquiry into the Causes and Effects of the Variolæ Vaccinæ. 1798.

† Ros. Anglie, p. 1044.

‡ Account of the Varioloid Epidemic which has lately prevailed in Edinburgh and other parts of Scotland, &c. By John Thomson, M.D. F.R.S. &c. 8vo. 1820.

of the continent, afford striking examples; as has also the late variolous epidemic among the inhabitants of Columbo, and the Kandyan provinces at Ceylon as related by Mr. Marshall.* GEN. III. SPEC. Empyesis Variola. Small-pox.

Many of the cases of this kind described or collected by Dr. Thompson, to whose indefatigable zeal the profession is under an irremunerable obligation, are peculiarly striking; as they consist of families the different branches of which, receiving it in succession from each other, evinced in turn almost every variety to which the small-pox can make any fair pretension, distinct, confluent, crystallized or varicellous, and horny; and all of which, in many instances, manifested a power of regenerating and propagating the disease in its purest or pustular form, though this was often lost in several of them. The following case, contained in a letter from Mr. John Malloch to Dr. Thomson is peculiarly entitled to attention. "No case of small-pox had occurred in this town for nine years till last winter, when an idle boy, who was in the habit of wandering about the country, frequenting markets, &c., happened to be at a house where some of the inmates were said to be ill of small-pox. He himself had been vaccinated some years before. On his return home he was seized with febrile symptoms, and confined for two or three days to bed, when an eruption similar to chicken-pox made its appearance. Immediately the fever abated, and in a few days more he left his bed, and attended a cattle-market, half a mile's distance from the town, without experiencing any bad consequences. About a week afterwards one of his master's children was taken ill, and went through the regular stages of small-pox in a mild manner; then a second similarly. A third suffered in a very alarming degree from the confluent kind; a fourth was rather worse than the two first; and the youngest, of eight months old, had what, if the other cases had not

Thomson's collection of cases, pregnant with striking anomalies. Exemplified.

* Some Account of the Introduction of Vaccination among the Inhabitants of the Interior of Ceylon, and of an Epidemic Small-pox which prevailed in the Kandyan Provinces in 1819. By Henry Marshall, Surgeon to the Forces.

GEN. III. SPEC. Empyesis Variola. Small-pox.

occurred, I would without hesitation, have called chicken-pox: for there was little or no fever, and the pustules were filled with a watry fluid which was not converted into the purulent appearance of small-pox. None of these children had undergone vaccination."*

Kandyan epidemic of Marshall.

It is very singular that in the Kandyan epidemic described by Mr. Marshall, while several cases made a very near approach to varicella, all of them so far deviated from the ordinary character of the variolous secretion as to be devoid of a creamy and consistent pus, and rarely to exhibit more than a whey-like matter, whether the eruption were distinct or confluent, or the fever mild or severe. In other respects Mr. Marshall observes the disease did not materially differ from the description given of the small-pox by the systematic writers. For some days the eruption was papular; it then became vesicular, each vessel having a depressed point in the centre. During the early stage of the vesicles they contained pure lymph; subsequently they became less pellucid and assumed a whitish hue: and when matured they contained the above whey-like fluid. "In no instance," says he, "that came under my observation did the contents of the vesicle assume a yellow colour and thick consistence, as is stated to occur in small-pox in Europe."

Still all these aberrations different from small-pox after vaccination.

These, it should be observed, were not cases that had been preceded by vaccination. Many such occurred, but the eruption was here of a still different and more modified, and even a more mitigated kind, still showing the controlling power of the vaccine fluid. This eruption, indeed, was occasionally severe, but uniformly appeared after two or three days' fever. For the most part it was confined to the fore, or the upper part of the body, ranging from one or two to thirty papulæ, and was remarkably uniform in its progress. It consisted of elevated hard pimples containing a vesicle of pure lymph *at their apex*. These, by the fourth, fifth, or sixth day

Ordinary progress of this epidemy.

* Variol. Epidem. p. 333.

reached their full size, and were soon followed by desquammation.

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It not unfrequently happens that in dangerous cases the papulæ do not rise kindly, but assume the form of stigmatized dots, while the surface is circumfused, generally, with a brighter or deeper efflorescence, according to the nature of the habit; under which circumstances the disease makes a near approach to rubeola, and has, at times, been mistaken for it. Of this form also, the late Ceylonese epidemic, as described by Mr. Marshall, afforded various instances. "There were a few cases," says he, "where the skin assumed a MEASLY appearance. Under this description of the disease the surface of the body resembled wet brown or blotting-paper. The fever continued without abatement: and frequently little or no eruption appeared. I am not aware that a single case of this kind recovered."

Sometimes makes an approach to measles.

Exemplified also in the Ceylonese epidemic:

the cases uniformly fatal.

And where, in the confluent variety, the secreted ichor, for the inflammation is seldom suppurative, is peculiarly virulent, we frequently meet with trails of vesicular and fiery erythema spreading over different parts of the swollen body not unlike, in appearance, to the ignis sacer of that variety of plague which the ancients peculiarly distinguished by the name of anthrace, and which in the present classification is denominated erythematous plague.* And the resemblance is still more close when this form of confluent small-pox is combined with bubonous or other ulcers: of which, examples are frequent in hot climates, as in the epidemic attack of small-pox at Aleppo as described by Dr. Russell. "If the sick," says he, "survived the eleventh day, few of them escaped corrosive ulcers with carious bones, or *hard swellings in the glandular parts.*"† Even in the colder temperature of our own country, the same miserable train of symptoms has sometimes shewed themselves, as observed by Dr. Huxham "variolæ epidemicæ interdum crudo diffluunt ichore, qui subjectam carnem erodit, imò et nonnunquam ipsâ gangrænâ afficit."‡

Where confluent, sometimes mimics the erythema or the ignis sacer of anthrace or erythematous plague:

and even evinces bubonous or other tumours.

Exemplified from Russell:

from Huxham.

* See Gen. IV. Spec. I. Var. γ. of the present Order.

† Oct. 1742. ‡ Julio, 1744.

GEN. III. SPEC. Empycsis Variola. Small-pox.

It is not very surprising, therefore, that the small-pox on its first discovery, and, indeed, for long afterwards, should, according to the variety it assumed, have been confounded with all these diseases, and especially with the measles and chicken-pox—from their originating, or at least being first noticed about the same period, and consequently being equally new diseases. Hence we are told by Rhazes that Aaron of Alexandria who wrote on this disease as early as A. D. 620, arranged the small-pox, measles, and anthrace or erythematous plague as products of one common specific contagion.* The last was, indeed, soon thrown out of the list, but the two former continued to be contemplated by most writers as one and the same disease for eight centuries after the era of Aaron.

Hence small-pox at first often confounded with all these diseases:

especially by Aaron of Alexandria.

With respect to the small-pox and chicken-pox there has been more difficulty. A contest of no ordinary magnitude arose in early times upon the subject, in support of which, every nation in Christendom, as in the Holy Wars, for many ages sent forth its champions; and the conflict has been of a still longer duration than the Holy Wars themselves.

Chief difficulty felt in respect to small-pox and chicken-pox.

Conflict upon this subject early and long continued.

In the midst, therefore, of all this confusion of diseases nothing can have been more called for than a judicious attempt to distinguish the one from the other, and to lay down their respective land-marks; and hence those who have engaged in such an undertaking have ever been entitled to the warmest thanks of the profession.

Distinctive marks hence of great importance.

Rhazes, in this respect, may be said to have taken the lead. He carried at once the anthrace or erythematous plague of Aaron to a distinct genus from al-gridi or the small-pox; and though he continued this last and measles, (*al-hasbet* rather than al-hasba as commonly written) under the same genus, he arranged them as distinct species, and consequently regarded them as separate diseases: while to the small-pox, thus disentangled and simplified, he assigned pretty nearly the same

Attempted by Rhazes.

His combinations and distinctions.

* Rhaz. De Variolis et Morbillis, in Continent. Lib. XVIII. Cap. VIII. Interprete Feragio Judæo. A.D. 1486.

varieties as have been allotted to it by the most discriminating writers of the present day; for he very accurately describes the distinct, the confluent, and the limpid or vesicular, including the crystalline and horny; and treats of the disease under the opposite characters of benign and malignant.*

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Unfortunately the limpid or lymphatic small-pox was incautiously denominated chicken-pox by way of distinction from the purulent, by many writers of great authority and talents, as Morton,† Gideon Harvey,‡ Mead.§ While, which was more common, varicella or water-pox in all its varieties, was designated by the term variola, though regarded as having no real claim to such a term, and hence discriminated from the genuine disease by the adjunct *spurious* or *bastard* variola, of which Van Swieten furnishes us with a striking example. For after having noticed under his description of variola the *steen-pochen* (stone-pox) *water-pochen* and *wind-pochen*,‖ all which he distinctly characterizes by the name of spurious variola, and observed that he has seen them as frequently epidemic as the genuine small-pox, occasionally indeed running a race with the latter and sometimes succeeding it, he dismisses them altogether, and proceeds with the history of the genuine disease in all its modifications: telling us that, like Dr. Mead, he had met with the crystalline variety, as well in the confluent as in the discrete form, occasionally indeed intermixed with the pustular: and that under this variety was reckoned by the best writers the siliquose, or that which consists of soft and empty vesicles, but which are sometimes at last filled with pus.¶ In much of this he is followed by Sauvages; who, however, regards varicella by name as a distinct va-

His vesicular form unfortunately called by many chicken-pox: while varicella or water-pox was called variolæ, though distinguished by the adjunct bastard, especially by Van Swieten;

Sauvages;

* Rhaz. De Variol. et Morb. Ferag. Jud.—See also Mead's Works. Vol. II. p. 163. Edit. Ed. 1765.

† Treatise upon Small-pox. Lond. 1694.

‡ Treatise on Small-pox and Measles. Lond. 1696.

§ De Variol. et Morb. ex Rhaz. Lond. 1766.

‖ Comment. Aph. 1331. Vol. v. p. 11. edit. Lugd. Bat. 4to.

¶ Comment. ut suprà. Aph. 1398.

GEN. III. SPEC. Empyesis Variola. Small-pox. Hoffman.

riety of small-pox; while with Hoffman* he separates it from the crystalline or lymphatic variety which he makes synonymous with horn or cornoidal pox (spitzpochen) and water-pox.†

Hence a stricter discrimination still wanted.

A more pointed discrimination, therefore, became necessary, and a still stricter attention to the specific characters by which small-pox and chicken-pox are distinguishable.

And attempted by Fuller and others: to Willan; not without considerable success.

This was successively undertaken by Fuller,‡ Borsiero (Burserius,)‖ Hosty,§ Heberden¶ and Willan; and has been so far accomplished as to have satisfied the profession generally, although it has not perhaps at any time set the question altogether at rest in the mind of every one.

Present danger of returning to the same conflict: and why.

Of late years, however, the learning and acuteness of many pathologists seem to have put us in no small danger of going back into all the confusion which existed in former times: not, in any respect, from ignorance of the real nature of the eruptive diseases towards which their attention has been turned, but from a scientific desire to generalize and simplify them.

Singular attempt of Frank.

About thirty years since, Professor Frank of Milan, dissatisfied with the ground of that general composure of mind which seemed to have taken place on the subject, commenced a new agitation, and undertook to show that chicken-pox (varicella,) crystalline, and horn-pox, and in general all those forms of exanthem, which, since his time have been called, though with no very classical term, *varioloid* diseases, belong to PEMPHIGUS as a genus, under which also he places pompholyx. This genus he divides into two species p. *amplior*, importing the ordinary form of the disease, and p. *variolodes*: "eamque," says he, alluding to this variety, "aut vesicularem (*variola spuria emphysematica,*) aut crystallina (*aquosa, varicella* auctorum) aut solidescentem (*variola spuria verrucosa,* acuminata, sicca, dura, ovalis aucto-

* Opp. Sect. I. Cap. iii. p. 293. Ed. Gen. 1740.
† Cl. III. Ord. II. Gen. II.
‡ Exanthematologia. p. 167. Lond. 1730. § Institut. Med. Tom. II.
‖ Mercure de France. Janv. 1769. ¶ Medical Transact. I. 427.

rum) appellari vellemus."* It is not necessary to follow up his argument, since, however well supported, it has for some time been sinking into disrepute, though, amidst the versatilities of opinion and conjecture which have of late distinguished the medical world, it is not impossible that, like many far more obsolete doctrines, it may yet revive and have its day again. It is necessary, however, to advert to it as forming one of the first and best supported deviations from the general concurrence of opinion that had for some time been entertained upon the subject.

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Anomalous epidemic variola of 1816 at Montpellier.

In the variolous epidemic which prevailed during 1816 at Montpellier, the eruption seems to have presented almost all the diversified forms under which it is ever to be traced, in respect to shape and number of pustules, the nature of their fluid, the length of time which they require in order to be exsiccated into scales or scabs, and in the duration and severity of the eruptive, as well as in the absence or presence of the secondary fever. The chicken-pox (whether pemphigus or varicella) as is often the case, appears both to have preceded and to have accompanied the genuine variola; and the two were in many instances so closely intermixed, and alternated, as to render it a work of no ordinary difficulty to draw a line of demarcation. "Never perhaps," says Professor Berard, who, in conjunction with Dr. de Lavit, has given an interesting history of this epidemic,† "did the chicken-pox in their symptoms so nearly resemble those of the small-pox, nor these diseases more fully assume the characters of each other." The result was that, although at the commencement of the epidemy they contemplated the two diseases as perfectly distinct, but running a common race, they were at length inclined to regard them as identic, for reasons highly plausible, and which they advance with great modesty; and thus again enlisted chicken-pox under the banner of variola. And since this time Professor Thomson of Edinburgh, from

Described by Berard and De Lavit.

Renovated attempt of Thomson.

* De Cur. Hom. Morb. Epit. Tom. III. p. 264. Mannh. 8vo. 1792.

† Essai sur les Anomalies de la Variola et de la Varicella. Paris. 1818.

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an attentive observation of like coincidences in the late variolous epidemy in Scotland, to which we have already adverted, has not only felt inclined to draw the same conclusion, but has, with great industry and force of argument, endeavoured to establish an identity of species between these two eruptions by a copious reference to their history, and the progress of the contest to which they have given rise, as developed in all the standard authorities, foreign as well as domestic, from the accredited date of their origin to the present day.*

Discrepant and still more singular attempt of Willan to identify small-pox and plague.

It is not a little singular, and tends in the strongest light to show the discursive powers of human genius when aided by the resources of learning, that at the very moment of this new attempt to combine diseases, which have of late years been regarded as distinct, or as claimed in various forms by another genus; Dr. Willan, who had laboured hard to support and rivet such distinction, was engaged in the more arduous task of establishing the identity of small-pox and plague in that variety of the latter, which makes the nearest approach to small-pox, and which we have already referred to under the name of erythematous. His researches, which have been published posthumously by his learned relative, Dr. Ashby Smith,† are written with an amenity and antiquarian interest that fully entitle them to a place in every medical library, whatever becomes of the question itself, and have, undoubtedly, brought conviction home to the minds of not a few. So that if the whole of these elaborate lucubrations could maintain their ground, plague, small-pox, chicken-pox, pemphigus, and, perhaps, cow-pox, grease-pox,‡ measles, and scarlet-fever, would all be resolvable into one common malady, and derivable from one common

* Historical Sketch of the Opinions entertained by Medical Men respecting the Varieties and Secondary Occurrence of Small-pox, &c. in a Letter to Sir James McGregor, &c. 8vo. London, 1822.

† Miscellaneous Works of the late Robert Willan, M.D. &c. comprising an Inquiry into the Antiquity of the Small-pox, Measles, and Scarlet-fever, &c. 8vo. Lond. 1824.

‡ Thomson, ut supra, pp. 146, 387.—Willan, ut supra, p. 69. note 75.

virus. While, as another learned attempt has been set on foot by a third body of pathologists of no mean authority or pretensions,* to show that plague itself, in this case the primary and original source of them all, does not exist in any shape, nor ever has existed, as a specific disease; and is nothing more than a typhous or malignant fever with an accidental appendage of efflorescences, eruptions, or tumours of various kinds, modified by a host of contingencies (to which indeed, Dr. Frank is also a party in his first volume,†) the whole system of pyretology seems, in the present day, to have some chance of being concentrated into a marvellously small compass, and for the benefit of future students, may, perhaps, be engraven on a silver penny. But where the land-marks of diseases are thus successively broken down one after another, till no guiding-post is left, how is the young student to make his way over the trackless common before him?

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While by others the existence of plague as an idiopathic disease is altogether denied.

This view of the subject might easily be carried still further: for after Dr. Willan had persuaded himself that the erythematous plague of the ancients was nothing more than the vesicular and confluent variety of small-pox, he persuaded himself still further that the distinct and coherent form of this disease is, in many cases, synonymous with their phlyzaciæ, lichenes, and ecthymata;‡ thus melting down a multitude of other eruptive affections into the same crucible. Had he lived longer, indeed, it was his intention to have unfolded in a similar way the history of syphilis, which, like all the preceding complaints, he conceived to be of immemorial origin, and, apparently, to have had a close fellowship with them.§

The subject capable of being pursued further.

It must be conceded to Professor Thomson that it is often peculiarly difficult, sometimes perhaps unconquerably so, to distinguish by the superficial appearance, the

Concessions to Thomson.

* Heberden, Observations on the Increase and Decrease of different Diseases, particularly the Plague. 8vo. 1801.—Hancock, Researches into the Laws and Phænomena of Pestilence, &c. 8vo. 1821.

† De Cur. Hom. Morb. Epit. Tom. I. p. 136. ‡ Will. ut suprà, p. 53.

§ Miscellaneous Works, p. 87. foot-note by Dr. Ashby Smith.

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nature of the fever, or even the mark that remains on the skin afterwards, chicken-pox from small-pox, and especially, which is what he particularly alludes to, that modification of small-pox, which is so apt to follow upon vaccinia or cow-pox, where the latter has only given the constitution a check and not an utter exemption. But these approximations are only to be traced in extreme modes of the two diseases, and where they make a considerable divergence from their right and proper course; for in a pure or perfect state of small-pox and chicken-pox whether we regard them as distinct diseases, or as mere varieties of one common species, there is no difficulty whatever. And even in their widest departure from such state, and their closest approximation to each other, as well in unity of time as of character, they do not more intimately coincide than in the case of various other diseases of whose distinction there never can be a question. Thus in idiopathic epilepsy and intestinal worms the symptoms are often precisely the same; and the existence of the second, at first only conjecturable, is, at last, only ascertainable by the action of anthelmintics. But worms may also be accompanied with all the symptoms of a genuine hectic; as may this latter with all those of a quotidian or a tertian ague. So measles have often been confounded with rosalia or scarlet-fever, and miliaria with eczema or heat-eruption; and it is one of the most important parts of nosology to point out the distinctive marks of such analogous diseases, though a part in which it has not always succeeded.

But the general distinction not hereby disturbed.

Like approximations betweenother diseases whose distinctionhas no question. Exemplified.

The exemplification applied.

As there are some disorders that render the constitution less disposed to the small-pox than others, of which the cow-pox furnishes us with an example; there are also some that render it more so. In like manner we find the measles generally superinduce catarrh; and very frequently prepare the way for hooping-cough; insomuch that all these maladies become synchronous. So the chicken-pox not unfrequently lay a foundation for the small-pox, and the small-pox may perhaps, in persons of a particular habit, lay a foundation for the chicken-pox; or even the atmospheric intemperament of either of these

diseases, when epidemic, may call the other into play; so that both, as we frequently see, co-exist, not only in the same place, but even on the same person. In truth the same constitution of the atmosphere often favours the growth and spread of various diseases equally; and hence, rubeola, varicella, rosalia, and catarrhs are not unfrequently coincident.

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Diacritical signs laid down.

But still the two diseases before us have marks, if I mistake not, so strictly essential, as to render it highly incorrect and unscientific to contemplate them as mere modifications of a common exanthem: which moreover in various cases, by throwing the practitioner off his guard, might lead to a very erroneous treatment and a dangerous exposure of the person. If these be not to be found in the ordinary distinctions that have been pointed out by Dr. Heberden, Dr. Willan, and other monographists, as resulting from the form and duration of the pock, the consistency of its fluid, and the integrity or dip of the skin after the eruption is over, we must look beyond the obvious symptoms to the intrinsic properties of the respective matters eliminated, and the influence of the two diseases on the constitution in future. And here I think we shall not look in vain.

I. Matter of small-pox uniformly produces small-pox by inoculation.

I. The matter of small-pox is capable of re-producing small-pox BY INOCULATION. It continues true to its own specific character, and possesses this power to infinity. The matter of chicken-pox is not capable of re-producing small-pox BY INOCULATION; nor is it often capable of re-producing even its own kind. It will sometimes excite an irritation around the puncture, but it seldom seems to proceed farther. Nor, indeed, does it always irritate locally: for we have already seen that Dr. Heberden, with all his efforts to obtain this effect, found that "the little wound healed up immediately, and showed no signs of any infection."* Of the two cases described by Dr. Willan, the first, indeed, affords an example of regular local specific action; "for the vesicle on the inoculated

Matter of measles does not produce small-pox by inoculation: and very rarely reproduces itself.

* Medical Transactions, Vol. I, Art. XVII.

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part went through its ordinary course; and, twelve days after the incision he observed, further, that two small red eruptions appeared on the shoulder, and soon became vesicular;" but in the second case even the local irritation appears to have been nearly as trifling and unspecific, as in the case of Dr. Heberden: on the third day after inoculation "the small scratches made by the lancet were discernible, but not inflamed." On the fourth "they were scarcely visible." On the fifth, "a redness with some degree of hardness and elevation appeared at the places punctured, but subsided again on the following day." On the eighth, "no vestige remained of the inoculation." It should be observed, however, that *twelve* days after the use of the lancet two small gnat-bite-like spots appeared on the patient's side, which became vesicular; and, that two days after this, "a considerable number of vesicles with surrounding redness, appeared on his body, but there were not any on his face." On the next day, "he was free from indisposition, and no further eruption took place." The whole of which general eruption, in consequence of the imperfect action exhibited on the arm, was reasonably ascribed to contagion received antecedently to inoculation, the patient, who was a boy of nine years old, having been the constant play-mate of his brother, from whom the fluid was taken, and who had caught the disease at school.*

From this slightness of irritability in the fluid of the varicellous vesicle, many practitioners have supposed that it is nothing more than an increased secretion of the serum of the blood, like that which takes place in "any blister produced by scalding or cantharides."† This, however, is hardly to be admitted; but it is impossible to reflect upon the readiness with which most cutaneous eruptions, whether merely superficial or constitutional, are capable of propagating themselves by inoculation, as cow-pox, plague, syphilis, psoriasis, porrigo, and scabies, in all its

Its virus by inoculation almost the inertest of any virus whatever, while that of small-pox is one of the most active.

* On Vaccine Inoculation, p. 98. 4to. 1806.

† Brown's Inquiry into the Anti-Variolous Power of Vaccination, p. 223.

forms, as well as small-pox, without a conviction that the fluid of the varicellous vesicle is, at least, one of the most inert and inacrimonious of the whole; and consequently something widely different from that of the small-pox.

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The power of propagation possessed by genuine small-pox, moreover, is not only, in direct opposition to the power of chicken-pox, peculiarly active, but runs through all its varieties; each of which, however deflected from the standard of perfection, has a tendency, though not an equal tendency, to reproduce the same disease, and to model it after such standard: and hence we have a thousand instances of discrete purulent small-pox generated by inoculation from the confluent or crystalline varieties.* Not, indeed, that the latter is always as sure in its action, for it often fails from its imperfection; but wherever it evinces specific power enough to operate, it reproduces the genuine disease, and mostly with a completely matured pustule. In effect it is rarely that the fluid in the confluent small-pox becomes thoroughly matured or purulent, and yet it is seldom that this has been found unavailing.

and not only peculiarly active, but runs unchanged through all its varieties.

II. An incursion of natural small-pox protects the system against a recurrence of small-pox, and an incursion of natural chicken-pox against a recurrence of chicken-pox, but neither of these affords the slightest security against the other. This protection, indeed, is not universal, and hence we have, in both diseases, a few examples of secondary or even ternary affection; but the rule holds generally and is not fundamentally disturbed by such anomalies. And we have hence a full proof that the intrinsic qualities of each virus is distinct, and consequently that the diseases themselves are so.

II. An incursion of small-pox protects the system against a recurrence of small-pox: and of chicken-pox against that of chicken-pox, but neither protects against the other.

III. The matter of cow-pox, which affords a like protection to the system against small-pox, affords no protection whatever against chicken-pox. On the contrary, according to many writers, it seems rather to pave the way

III. Cow-pox affords protection against small-pox, but none against chicken-pox.

* Frewen, Essay on Inoculation, 1749.—Willan, On Vaccine Inoculation, p. 55.

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for chicken-pox;—if all the anomalous eruptions which have been regarded as chicken-pox since the introduction of vaccination, have been fairly entitled to this appellation, instead of to that of spurious small-pox, as they were formerly called; since such eruptions appear of late years to have been more frequent than ever. But of the real nature of several of these we are perhaps to the present moment in a considerable degree of ignorance.

On the contrary is said to pave the way for it: or for eruptions of very like character, but which may be different and more recent. Elucidated from Blane.

They may perhaps be of later origin than either the small-pox, cow-pox, or measles, and they may possibly wear themselves out sooner, and give way to other eruptions of which at present we know nothing. "For it seems deducible," says a learned and highly venerated friend of the author, "that there is not a secretion or exhalation of the human body which may not be so vitiated as to produce diseases communicable to others by contact or respiration, under various fortuitous circumstances of concentration and stagnation, application and action: so that there may be new maladies awaiting our species, which are still to develope themselves under the endless combination of the incidents of human life through endless ages to come."*

By the facility with which some of these are capable of producing fresh crops of their own nature in inoculation, they seem to be distinct from varicella; and from their forming no protection against the small-pox, they are evidently distinct from the latter, notwithstanding their frequent approximation to them in duration, and the external qualities of the pustule.

These signs apparently incontrovertible and sufficiently differential.

These are marks uncontested, I believe, by any party; and they are sufficiently differential to establish a clear distinction in the nature of the two eruptions, and consequently to separate the diseases from each other.

Small-pox as little identic with lœmus or plague, in any of its varieties.

That small-pox is not identic with any of the varieties of the lœmus or plague, properly so called, of the Greek writers, is still more easily capable of proof. The variety

* Select Dissertations on several subjects of Medical Science. By Sir Gilbert Blane, Bart. &c. p. 214. 8vo. Lond. 1822.

peculiarly fixed upon by Dr. Willan, is that which was often distinguished by the name of ANTHRACE, the erythematous form of the present classification, in which the body is "covered over with trails of vesicular erythema, producing deep, sanious and gangrenous ulcerations as it spreads, often to a loss of one or more limbs."*

GEN. III. SPEC. Empyesis Variola. Small-pox. Anthrace, or erythematous plague.

In this last there is, indeed, some resemblance to confluent small-pox as they sometimes show themselves in cases where the fluid is yellowish, transparent, and immatured. But there is no resemblance whatever to the pustular discrete small-pox; and hence Dr. Willan is under the necessity of supposing that the latter are alluded to by the ancients under some other term, and constituted with them another and widely different disease. "As the angina *maligna*," says he, "was for many ages thought generically different from the scarlatina febris, so was the CONFLUENT VESICULAR SMALL-POX deemed a principal branch of the LOIMOS or PESTILENTIAL FEVER: while the DISTINCT, and COHERENT VARIOLÆ, with yellowish pustules and a moderate fever, were ranked with phlyzacia, ecthymata, lichenes agrii, &c. This may be traced up to Hippocrates:—he, as well as Galen, speaks of pemphigoid fevers, fevers with phlyctænæ, and the anthraces, as *pestilential* and *malignant:* and of another set of fevers in which appear critical, inflamed, and suppurative tubercles or pustules."†

Some resemblance in this to confluent small-pox, but none to discrete.

Hence Willan found a necessity for supposing these to have been formerly regarded as distinct diseases: the one a plague: the other a phlyzacia or something else.

Now the term ΛΟΙΜΟΣ or PESTIS, was employed among the Greeks and Romans, like our own derivative PESTILENCE, in two very different senses, a strict or particular, and a loose or general. Under the first it always imported, as plague or pestilence does in our own day, one and the same specific disease; under the latter it was applied to various sorts of disease possessing any high degree of malignity, whether among mankind or among brutes, as the word pestilence is still used among our-

Lœmus or pestis how employed formerly.

* Anthracia Pestis γ Erythematica, Gen. IV. Spec. I. of the present Class and Order.

† Miscellaneous Works, ut suprà. p. 50.

GEN. III. SPEC. Empyesis Variola. Small pox.

selves. But it is immeasurably difficult to adopt the view of this subject taken by Dr. Willan for the following reasons.

I. No description whatever of small-pox among Greek or Roman writers: nor any thing to be gleaned beyond a supposed hint. But if small-pox had existed at all, it must have been common and described at large as a specific name.

First, we have no DESCRIPTION whatever of any such disease as small-pox in the writings of any of the Greek or Latin physicans: and all that Dr. Willan, or any one else can accomplish upon this point, is to glean a few incidental passages which may be supposed to ALLUDE to it in different places or volumes. Now if the small-pox existed among the Greeks or early Romans at all, they must have existed as a common and popular disease; and it is impossible to suppose that among pathologists, so minute in their attention to other diseases, and the descriptions they have given of them, as Hippocrates, Aretæus, Galen, and Celsus, they should not have described small-pox also at large, and assigned some fixed and specific name to this as well as to apoplexy, cardialgia, catarrh, opisthotonus, instead of leaving us to seek for it at random under the names of lœmus, anthrace, eulogia, and various other affections.

II. It must have existed with its varieties, and these varieties have been appropriated to a common species, instead of being regarded as diseases altogether distinct.

Secondly, as the small-pox, if they existed among the Greeks at all, must have had a frequent existence, and their varieties of discrete and confluent, mild and malignant, must have been known to every one, it is impossible that Hippocrates or Galen could have made that separation between such varieties as Dr. Willan is obliged to suppose: and have contemplated them as distinct diseases, of very different origins, and destitute of all generic connexion whatever.

III. Inoculation for the very form of plague which Willan supposes to have been small-pox was tried, but neither produced a milder sort, nor guarded against a recurrence.

Thirdly. Inoculation for the plague was occasionally tried in ancient times, as it is in our day, and especially for that particular variety of the plague which Dr. Willan especially adverts to, as making the nearest approach to the small-pox, and always with the same result. Instead of producing a milder disease, as in the latter case, it uniformly proved fatal. The last attempt of this kind appears to have taken place in the reign of the Emperor Commodus, A.D. 189, and is thus described by Dion Cassius, in his narrative of the plague which overran so

large a portion of the Roman territory at this era, and which is admitted by Dr. Willan to have been the modification of plague now alluded to: "Many died in another way, not only at Rome, but over nearly the whole empire through the practice of miscreants, who by means of small, poisoned needles, communicated, on being paid for it, the horrid infection so extensively that no computation could be made of the numbers that perished."*

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Dr. Willan notices this passage of Dion, and very adroitly endeavours to turn it to his own account. "This absurd report," says he, "is very analogous to the calumnies against our early inoculators." The inoculators, however in every other part of the world, when employed upon small-pox succeeded in every instance in triumphing over such calumnies: they were upheld by the force of truth: they pointed to the favourable result of their practice, a result which it was impossible to deny; and hence there is no nation in ancient or modern times, barbarous or civilized, Asiatic, African, or European, as we shall have to observe hereafter, wherever variolous inoculation was introduced, but became gradually sensible of its benefit, and hailed it as an incalculable blessing. Why was not the same triumph obtained by inoculation for the disease before us in Greece and Rome? Why but for the reason alleged by the historian—that, instead of an incalculable blessing, it proved an exterminating curse, and thus gave a clear manifestation that this disease was not the small-pox?

Remark of Willan on this subject answered.

Fourthly, that the anthrace referred to by Dr. Willan, was not small-pox, but a variety of the proper lœmus or pestis, is clear from its existing in the same quarter of the globe in the present day, and being expressly described as such by pathologists of the highest authority, of whom it may be sufficient to mention Dr. Alexander Russell, whose account of this form of plague, as it appeared before his eyes, we shall advert to in its proper place;† and who was also as accurate an observer of small-pox, which he has in like

IV. This species of plague still in existence, and sufficiently ascertained to be plague and not small-pox in the present day.

* Hist. Rom. Lib. LXII.

† Gen. IV. Spec. I. of the present Class and Order.

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manner represented as it occurred to him; but who never once dreamed of regarding the two diseases as identic,* or possessing any near connexion.

Rhazes misled in imagining something the same as Willan.

Dr. Willan, however, relies mainly upon Rhazes, who seems, unquestionably, to have entertained some ideas upon this subject in unison with himself; for, apparently misinterpreting a few loose passages of Galen in the same way Dr. Willan has done, and particularly where Galen is treating of phlegmonæ, erysipelata, herpetes, and ionthi,† he tells us that the small-pox and measles were known to Galen six hundred years before his own era.

Proof of his looseness and inefficiency of description as to these diseases derived from his Greek translator.

In answer to which, however, it may be sufficient to quote the following admission on the part of the Greek translator of Rhazes's Treatise on the small-pox and meazles (al-gridi and al-hasbet), written in the tenth or beginning of the eleventh century, and dedicated to the reigning emperor, and which he entitles Περι Λοιμικης "on the PESTILENCE," for by this name, adopting the vulgar meaning of the term, he denominates these diseases: "It is confessed by all persons conversant with the writings and laborious researches of Galen, that nothing which pertains to medical science or the cure of diseases, has escaped his penetration. With regard, however, to the pestilence (Λοιμικη,) he is less explicit than on other subjects: he speaks of it *cursorily*, or *in connexion with analogous complaints*, but *he does not any where state distinctly the symptoms or appropriate mode of treatment in it:* —strange, that he who first organized the medical art, and defined what had been left indeterminate, should have but slightly noticed a disease to which every man is born liable."

The most powerful opponent of Willan, Willan himself.

But the most powerful opponent of Dr. Willan upon the whole of this subject, is Dr. Willan himself; who, only a few years before gave us his opinion upon it in the following form; and it is not a little singular to observe how directly it is controversive of that we have thus far

* On the Diseases at Aleppo. Ch. IV.

† Tr. De Compos. Med. sec. loc. De Prognos. à Pulsibus Lib. II. and De Usu Partium. Lib. IX.

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contemplated, while it does not appear that any new facts or additional evidence of importance had sprung up before him to produce such a change of sentiment.

His own prior comment on the above opinion of Rhazes.

On his referring to this celebrated treatise of Rhazes, "he takes it," says Dr. Willan, "for granted that the small-pox and measles were known to Galen more than six hundred years before his own time, being misled by some incorrect translation of Galen's works into the Arabian language. The passages which he quotes have certainly not the least relation to the diseases above mentioned (small-pox and measles.) Indeed no description of them, nor the slightest collateral hint, appears in the writings of the Greek physicians which could lead us to suppose they had any knowledge on the subject. Some modern writers have held a contrary opinion, maintaining that Hippocrates and his successors applied to the measles and small-pox the denominations of exanthemata, ecthymata, eczemata, erysipelata, herpetes, ANTHRACES, &c. Now some of these terms have been strictly defined, and in a way which admits of no such application: the rest are left indefinite, and always intended to express, generally, eruptions on the skin, yet have they not been appropriated to any particular form of them. A controversy, founded on materials so slight and unsatisfactory, was carried on with ardour during a part of the last century, but need not at this time be revived, when it is nearly consigned to oblivion."*

The first distinct description of small-pox, as admitted by all, is that of Rhazes in his Almansor.

In the midst of all this diversity of opinion, there is one point at least clear, and universally admitted, I mean that the earliest distinct description of the disease which has descended to modern times, is that of Rhazes. It is contained in his Almansor, which was composed about the end of the ninth or the beginning of the tenth century; and in this he quotes from an Alexandrian physician, of the name of Aaron, who had written on the same subject as early as the year 622.

Yet it is very singular, that neither Rhazes nor Aaron, so

* On Cutaneous Diseases, p. 251. 4to. Lond. 1808.

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far as their writings have reached us, make mention of the contagious property of the disease, chiefly accounting for its production by an ebullition of the blood, which they thought particularly incident to the age between childhood and youth. And it is equally singular that it should be asserted by Aaron, as it was also by Avicenna, that the same person is liable to a return of it a second or even a third time, *præcipuè cùm sanguis sit acutus.* Has the disease undergone any change since this period so as to render those who have not had it more susceptible of its influence, and those who have had it less? In the descriptive part of the disease little is to be added to Rhazes's statement, and, what is more singular, he recommends the cool treatment. Unfortunately, however, the doctrine of concoction and despumation of the humoral pathologists spread afterwards so widely, and was so generally supported, as to put to flight this correct and rational view of the subject; and every attempt was made, by warm clothing and the warm bath, to mature the peccant matter, and drive it in as large a quantity as possible to the surface; by which the slightest cases were violently exasperated, and too often rendered fatal.

No notice by him that it is contagious:

and said to be renewable in the same person.

Cool treatment recommended by the Arabians. General pathology.

The severer the disease the sooner the pustules appear.

The severer the disease the sooner the pustules show themselves, thus completely reversing the law of scarlet-fever; a remark for which we were first indebted to the sagacious eye of Sydenham. And hence in the confluent variety the eruption appears on the second or third day, while in the distinct we have seldom any traces of it till the fourth, and often not till the fifth day.

Usually retarded in its progress by a sudden appearance of the measles.

If a patient have accidentally become impregnated with the contagion of the measles before inoculation or being exposed to the contagion of the small-pox, the latter, as we have already observed, will, generally speaking, be retarded in its progress, and not make its appearance till the measles have run through their course, upon the common law that the constitution is only affected with one disease at a time. But to this common law we have already pointed out various exceptions; and as gout and rheumatism sometimes co-exist, the measles and small-

But to this law various exceptions.

pox occasionally co-exist also. In the year 1769, Mr. King, of the Foundling Hospital, Dublin, inoculated forty-three children of the establishment. On the fourth or fifth day afterwards, sixteen of them sickened with the measles, and went through the disease regularly, yet the progress of the small-pox was not retarded or altered; for the pustules of the latter disease appeared as those of the former died away; and both complaints were of a mild character: a like coincidence occurred in the ensuing year, and with a like favourable termination.*

GEN. III. SPEC. Empyesis Variola. Small-pox. Illustrated.

In this case the common law of retardation seems to have been interfered with by some peculiar constitution of the atmosphere; for the effect was general to all who were under the influence of rubeolous contagion. In other cases we have a like interference with the common law of variola, from the idiosyncrasy of individuals or some temporary but equally occult power operating upon the system. There are some persons who seem to possess a natural immunity to its influence, and pass through life without ever being infected, though they may have purposely exposed themselves to the most contaminated atmosphere. There are others, who though incapable of being affected at one time, lose their emancipation at another. "I know an old nurse," says Dr. Huxham, "and one apothecary, who for many years attended persons, and a great number too, in the small-pox, and yet never had them; nay, many that have industriously endeavoured to catch this infection, by frequenting the chambers of the sick, have done it without effect; and yet some of these persons, some months or years after, have been seized with the small-pox."†

Retardation accountedfor.

Some persons permanently insusceptible by nature: others insusceptible temporarily.

But not only does the susceptibility of the disease vary in degree at different times and in different persons, but the irritability of the body beneath its influence. Thus, among fifty persons who receive it at the same time and undergo the same regimen, we may perhaps have as many

Irritability of the body to its influence as variable as a susceptibility for it.

* Edin. Med. Comment. Vol. III. p. 443.

† Treatise on Fevers, Small-pox, &c.

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degrees of violence; some dying beneath its severity, some escaping, though with great peril, and indelibly seamed and scarred, and others evincing little fever, and a very slight eruption. The present author caught it casually in London, when a child about six years old, and passed through it with scarcely any disturbance, and not more than twenty scattered pustules.

Illustrated in the person of the author.

In like manner we find, under inoculation, that while some persons throw forth a full crop, and suffer considerably from fever, others have scarcely any febrile symptoms, and no more eruption than the pustule on the puncture; the disease, in this case, exhibiting the same change as occurs in inoculated cow-pox, compared with the exanthem as received casually from the cow.

Hence the slightest eruption a sufficient security: perhaps the best security: and why.

It was at one time doubted, whether this slight appearance afforded protection for the future. There is now no longer any doubt upon this subject. But we may go beyond this, and reasonably conjecture that those who have passed through the disease with but little inconvenience, are even less exposed to future attacks than persons who have had it in the confluent form, and whose faces are marked with its ravages. For as the degree of violence depends, where there is no error in the treatment, upon the degree of irritability which the constitution manifests under the contagion, and as the irritability and susceptibility march with an equal step, he is most likely to have a renewal of the susceptibility in process of time who bears the most evident marks of a greater susceptibility antecedently.

Small-pox supposed formerly never to appear a second time in the same person.

It had indeed been conceived by very distinguished pathologists that the small-pox can never be had a second time, notwithstanding various assertions in support of this fact; and the argument is thus ingeniously put by Dr. Heberden, who was himself a disbeliever: "It would be no extravagant assertion to say that here in England not above one among ten thousand patients is pretended to have had it twice; and whenever it is pretended, it will always be as likely that the persons about the patient were mistaken, and supposed that to be small-pox which

Opinion adopted by Heberden.

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was an eruption of a different nature, as that there was such an extraordinary exception to what we are sure is so general a law."*

Those who have a recurrence, mostly marked by the violence of the first attack.

This remark is forcible, but the actual occurrences are in many, perhaps most of the instances appealed to, still more so. For, from the cause I have just pointed out, those who have had a repetition of small-pox have generally, if I mistake not, been able to exhibit proofs of a prior attack in pits or scars on the face or some other part of the body, manifesting the violence with which the disease ran its course, and consequently the strong predisposition of the constitution towards it, and irritability under its influence. "It is remarkable," says Sir Gilbert Blane, "that almost all the well-authenticated cases of second small-pox have been of those persons who in the first instance had undergone it in its most severe and dangerous forms."† Lewis XV. of France afforded a clear exemplification of this in 1774; and another still more striking is given, for the ensuing year, in the memoirs of the Medical Society,‡ in which though the first attack was peculiarly severe the second was more so, and proved fatal. The medical repositories are rich in cases of this kind, some of them so striking and so well established as to prohibit all doubt whatever: and in the two or three instances which it has fallen to my lot to witness I have traced the same character; for pits from the prior attack have been visible while the genuineness of the existing attack was in one instance substantiated by the test of inoculation.

The constitutional susceptibility sometimes runs through an entire family.

Exemplified.

In some instances this strong constitutional predisposition runs through every branch of the family, of which Dr. Barnes of Carlisle has given us a striking example in five individuals, sons or daughters of the same parents, who, having all caught the small-pox naturally in the summer of 1818, from which most of them suffered smartly, caught it again in February 1822, and had it also smartly, though not quite so severely as on the

* Medical Transactions, Vol. I. Art. XVII.

† Select Dissertations, &c. p. 209. 8vo. 1822.

‡ Volume IV. 1775.

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first attack. In both series of affection the individuals varied in the degree of fever and range of pustules; but in every instance, whether of the first or second series, the eruption was pustular. This account is given in the seventy-sixth number of the Edinburgh Medical and Surgical Journal;* and the very next article in the same number affords an instance of a family diathesis of the same kind in four individuals, sons or daughters of the same parents, who were attacked nearly simultaneously with small-pox after having undergone vaccination, which seems to have passed through its course satisfactorily, at different intervals varying from six to two years. A fifth child which had not been vaccinated, received the small-pox at the same time, and passed through it in much the same manner, but rather more mildly than one or two of the other instances. The eruption was in every instance distinct and pustular, though in one or two a few vesicles were interspersed.

Further exemplified.

Marvellous case of small-pox recurring to the seventh time;

That erroneous statements upon the subject of a recurrence of small-pox have been very numerously given to the world is unquestionable; among which we can find little difficulty in placing that of Borelli, containing the history of a woman who recovered from seven distinct attacks of small-pox, and died on the eighth; the antecedent eruptions having doubtless been those of some other exanthem or cutaneous efflorescence: but cases thus clear and incontrovertible are sufficient to establish an occasional departure from the general law, and teach us to look without a scoff upon the assertion of Rhazes and Avicenna, and the far earlier of Aaron, that the disease occasionally occurs a second, and, in some instances where there is a strong predisposition to it, even a third time.

being a mistake of some other exanthem.

Other exanthems evince a like anomaly.

A like deviation from the ordinary path of procedure impresses us in the history of other exanthems. The same general law prevails very strikingly in measles and scarlet-fever, but we have also a law of exceptions; and the exceptions in one disease seem to hold a steady pro-

* Journ. Vol. XIX. pp. 376—378.

portion to those in another. They are most frequent in scarlet-fever, fewer in measles, and still fewer in small-pox. In plague, the general immunity lasts but for a few weeks; yet some who have recovered seem to be protected for a much longer time, and several for life. In influenza, it extends through the whole duration of the existing epidemy, but the susceptibility recovers itself against the next visitation. In some remittents, as yellow-fever, the patient continues little susceptible for many years, perhaps for the whole of his natural existence: in intermittents, the susceptibility, on the contrary, is very generally increased; for the man who has once suffered from an ague catches it again more readily than another.

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A high degree of fever is not necessary to emancipate the system in any exanthem; and consequently not in small-pox. It is upon this principle that inoculation takes its stand in vaccinia as well as variola. Febrile commotion, as we have observed already, though necessary to throw the morbid poison to the surface, is only necessary in a small, and sometimes an almost imperceptible degree; and if it be urged beyond this, the morbid poison will be increased in quantity, the ferment will acquire a wider assimilation; and hence the fever and the eruption always maintain a balance. Provided the entire system submits to the influence of the contagion, the emancipation is always as perfect under a small product as under a large; and it is wonderful to observe how completely this influence extends through every part of the system, often indeed without any disturbance whatever, upon a deposit of the minutest particle of variolous contagion under the cuticle; for we are perpetually witnessing cases, or rather *were* when variolous inoculation was more frequent, in which a full change has been operated on the entire frame, though the only pustule has been that excited at the puncture; and the individual, before liable to the disease, is become liable no longer. And that the blood itself, and therefore every particle of the blood, is equally influenced in such circumstances, and even charged with the nature of the virus, is obvious

A high degree of fever not necessary for security in any exanthem. This principle illustrated.

Every part of the system affected, however small the virus applied.

Fetus affected from the mother: sometimes when the mother is unaffected.

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from the frequent communication of the disease from a pregnant woman to the fetus; and this too at times where the mother is no sufferer from the disease herself.

Remarkable example from Mead.

A remarkable example of this last fact is given by Dr. Mead in the following words: "A woman who had formerly had the small-pox, and was near her reckoning, nursed her husband who had caught it. At her full time she was delivered of a dead child, whose body was covered over with pustules; a manifest sign that it died of the small-pox before it was brought into the world."* Mauriceau has another case or two to the same effect:† and others have occurred since, and are noticed in several journals of later date.

Mysterious nature of this influence.

In these cases there is no assimilation or multiplication of morbid leaven: an influence is indubitably exercised, and that, too, over the entire current of blood; for it could not otherwise reach the fetus, yet without any sensible effect on the mother. What is the nature of this influence? is it by an infinitesimal division of the minute drop of contagion inserted into the skin, or that received by the breath? Whatever be the way, it enables us to be less surprised at the mode by which family taints, as gout, scrophula, and phthisis, are transmitted from generation to generation.

Fetus not always affected.

Unborn infants do not always receive the small-pox under the same circumstances, nor in every instance even where the pregnant mother sickens with the disease. Sir George Baker, who was indisposed to credit these singularities, refers to two instances in which the mothers having been inoculated, had passed through the eruption favourably, and brought forth infants, both of whom three years afterwards were also inoculated with good effect.‡ From all which we collect, and we can do no more, that a like variation occurs before birth, as we have just observed occurs afterwards; and that different individuals, or even

Illustrated from Sir George Baker. Illation.

* De Variolis, Cap. IV.

† Sur la Grossesse et d'Accouchement des Femmes. Obs. 600. et 576.

‡ Med. Trans. Vol. II. Art. XIX.

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the same individual under particular circumstances, evince a different degree of susceptibility; so that the contagion, though resisted at one time, is readily received at another.

Deep-seated organs admit no eruption on their surface; and drive it towards the skin.

There is another feature in the physiology of small-pox, that is peculiarly worthy of notice; and that is the power which all deep-seated organs possess of opposing a lodgement of the pustulous inflammation on their own surfaces, and driving it altogether externally where it can do least mischief. Dissections have abundantly shown that the viscera and cavities of the interior are never affected with the eruption, except such as, like the skin, are exposed to the approach or ingress of air, as the nose, mouth, trachea and its ramifications, and the entrance of the meatus auditorius. As a general rule, pustules are never found in the rectum, but if there be any prolapse and the sphincter be exposed to the contact of air, that part of the rectum, which concurs in the exposure, will share in the common fate of the external parts.

Proved from numerous dissections.

How far the atmosphere of contagion extends, not fully known: but apparently very limited.

To what extent variolous contagion is capable of radiating, as it issues into the atmosphere from a diseased body, has never been satisfactorily determined. In laying down the general rules of febrile miasm, I ventured to state that contagion or miasm generated in the living body, does not appear to be very volatile in any instance, and soon dissolves in a pure atmosphere. The contagion of small-pox seems fully to be governed by this law. When small-pox was more frequent than at present, medical practitioners, though passing casually from house to house, were rarely, if ever accused, of communicating the disease; and Dr. Haygarth has appealed to an evidence of facts in proof that the sphere of variolous contagion does not include a diameter of fifteen hundred feet, and probably not a hundredth part of such diameter.

Appearance of the eruption at different periods from the time of infection. Sometimes

As the susceptibility of small-pox varies so considerably in different individuals, it is not to be wondered at that the irritability of the system to its influence should vary also, and consequently that there should be some difference in the period of time between the supposed com-

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munication of the disease and its appearance by any manifest tokens. Upon the whole, the interval may be calculated to vary from six to twenty-one days in the natural small-pox; and in the inoculated, which anticipates the action a day or two, from four days to eighteen.

six days afterwards: sometimes twenty-one. Action quickened by inoculation.

The writers on this disease have subdivided it into an endless multiplicity of forms: but the four following varities are sufficient to include the whole:

α	Discreta.	Distinct small-pox.
β	Confluens.	Confluent small-pox.
γ	Degener.	Crystallized-pox.
		Horn-pox.
δ	Inserta.	Inoculated small-pox.

α E. Variola discreta. Distinct small-pox.

The pathognomic characters of the first variety or DISTINCT SMALL-POX are the following; Pustules pea-sized; distinct, distended, circular; the intervening spaces red; the fever ceasing when the eruption is complete.

Diagnostics.

The disease opens its battery with the usual signs of a febrile cold fit, accompanied with vomiting, and some degree of soreness in the throat. About the fourth, sometimes on the third day, the eruption begins to appear on the face, neck, and breast in minute flea-bite spots, which multiply every night for the ensuing four days, when there is usually a pretty full crop of them over every part of the body, though the face is, in almost all cases, far more covered than any other part; and that according to M. Camper in the proportion of five to one.* The head, face, hands, and wherever else the pimples show themselves, gradually swell, and the eye-lids are often so much distended as to close the eyes and produce blindness; the spaces between the pimples are reddish, and continue to grow redder as the pimples become pustules and ripen; the fever is of the caumatic or inflammatory kind, and the suppuration is complete on the eighth day, or thereabouts. On the eleventh, the inflammation and pustules manifestly abate, and the latter, mea-

* Les Advantages de l'Inoculation, &c. Paris, 1782.

suring the diameter of a pea, dry away by degrees, and scale off, and wholly disappear on the fourteenth or fifteenth day, with the exception of those on the extremities, which, as they come out later, commonly continue a short time longer.

GEN. III. SPEC. a E. Variola discreta. Distinct small-pox.

Such is the ordinary course: but the symptoms vary greatly in severity, according to the degree of fever, and extent of the eruption, which, as already observed, hold a pretty accurate balance. Where the pimples are few and scattered, there is but very little indisposition; but where they are very numerous, though still distinct, the soreness, swelling, and febrile heat are very distressing: and under this form the progress of the disease has often been divided into four stages, an incursive, an eruptive, a maturing, and a declining or scabbing,* at each of which it discovers an exacerbation of pyrectic symptoms. And when the patient is an infant, it is at these times, and especially on the incursion of the disease, occasionally attacked with a convulsion fit, or perhaps several in succession, which it was once the custom to make much lighter of than the occasion justifies.

Symptoms vary according to the degree of fever and extent of eruption.

Convulsion fits frequent in infants on the incursion of the disease.

The grand principle in the treatment of small-pox, as of all the other exanthems that have passed before us, is to moderate and keep under the fever; and, however the plans that have been most celebrated for their success may have varied in particular points, they have uniformly made this principle their pole-star; and have consisted in different modifications of fresh air, cold water, acid liquors and purgative medicines: heat, cordials, and other stimulants having been abundantly proved to be the most effectual means of exasperating the disease, and endangering life.

General treatment. Leading principle.

Dr. Mead seems to have been almost indifferent as to the kind of purgative employed, and certainly gave no preference to mercurial preparations. His idea was, that all were equally beneficial that would tend to lower the

Mead showed no preference to one purgative above another.

* J. P. Frank, De Cur. Hom. Morb. Epit. Tom. III. p. 159.

GEN. III. SPEC. *a* E. Variola discreta. Distinct small-pox.

system: "Indicium," says he, "certè satis manifestum, quamcunque materiæ diminutionem, fomitem igni subtrahendo, huic morbo apprimè convenire." And in this manner he accounts for the mildness of the malady after any great evacuation, natural or artificial; after acute diseases, immoderate catamenia, child-birth, and salivation.

Mercury seems to possess a specific influence.

Mercury, however, appears to have a specific influence upon the action of variolous matter; perhaps, as in the case of syphilis, upon the quality of the matter itself: for though, when considerably diluted with water, it is still capable of propagating the disease by inoculation, yet Von Wënsel has shown satisfactorily that when triturated with calomel it loses its energy, and in inoculation becomes inert and useless. Mercury has hence been denominated in Germany, remedium pancreston, and has certainly supported its character as the best corrector of the small-pox we are acquainted with from a period antecedent to the introduction of inoculation into Europe, to the present day. "Physicians who attend hospitals," says Sir George Baker, "have frequently observed the small-pox to be particularly mild in those patients who have happened to receive the infection soon after a mercurial ptyalism; and inoculation is said to have been a much more successful practice in some of our American colonies since the use of calomel has been there introduced into the preparative regimen." When given merely as a purgative it is usually mixed with the powder or resin of jalap, and in this manner acts much more briskly.

Proofs of this.

Prophylactics opposed by Frank.

Professor Frank seems to attach too little importance to a prophylactic treatment of any kind, whether by cathartics or alterants, mercurial or antimonial, unless with a view of removing worms or some other known irritant; his maxim being the very dangerous one for a sudden attack of an acute disease, that the firmest health is the best state in which to receive it. "Nemo sanior," says he, "quàm sanus esse potest; ac sæpè, qui ad morbum SE PRÆPARAT futurum, hic victas huic manus cedit, ac

ineptissimis in absentem, nec cognitum satis, hostem invehitur auxiliis."*

GEN. III. SPEC. α E. Variola discreta. Distinct small-pox.

Exposure to fresh and cold air is nearly, if not altogether, of as much service as calomel; and hence the patient, however inactive and dejected he may be, should be roused from his bed, and urged to use gentle exercise either abroad or in a cool capacious room. Cold water is usually prescribed in large draughts for the same purpose, and very generally proves highly refreshing. The acids, and especially the diluted mineral acids, have a peculiar influence in diminishing the extent of the eruption; insomuch that some inoculators have been bold enough to prophecy the number of pustules a patient would produce under a given quantity of the acid. Whether any one of the acids has an intrinsic power beyond the rest has never been sufficiently put to the test of inquiry; nor is it clearly ascertained in what way they operate towards the present effect. They are an excellent refrigerant in fevers of all kinds, but in small-pox there seems to be a something beyond this power, and they probably restrain the process of assimilation.

Exposure to fresh and cold air.

Coldwater.

Mineral acids.

Lemonade may conveniently form the common drink during the fever; or a solution of creme of tartar in water, which, as tending to keep the bowels gently open, will be preferable. When the fever is considerable, the purgative should be repeated at each of its exacerbating stages; and if convulsion-fits arise, the spasmodic irritation is best removed by laudanum.

The pathognomic characters of the CONFLUENT VARIETY are the following: Pustules confluent, flaccid, irregularly circumscribed: the intervening spaces pale: with great debility.

β E. Variola confluens. Confluent small-pox.

In this variety the eruption assumes, at first, the appearance of a general efflorescence without any distinctive points; innumerable pimples, however, show themselves about the third day, being a day or two sooner than in the discrete variety. They soon coalesce from

Diagnostics.

* De Cur. Hom. Morb. Epit. Tom. III. p. 190. 8vo. Mannh. 1792.

GEN. III. SPEC. β E. Variola confluens. Confluent small-pox.

their thronging number, and become filled, not with pus, but a yellowish serum, for this variety seldom suppurates regularly. The fever is violent and exhibits a synochous or typhous type; and, instead of subsiding on the appearance of the eruption, as in the distinct variety, very generally increases. The head is oppressed, the eyes inflamed, the brain comatose or delirious. After the eighth day the detached pellicle, covering a large secretion of this virulent fluid, becomes brown, and not yellow as in the distinct sort. Peculiar to the confluent small-pox is salivation in adults, and a looseness in children; the former always attends; the latter more rarely. The spitting begins as soon as the eruption appears, or within a day or two afterwards: the saliva is at first thin, and easily and plentifully discharged; but, towards the eleventh day, which is the period of the greatest danger, it becomes viscid and is discharged with great difficulty; the looseness in children, however, continues beyond this period.

Prognosis.

When the disease terminates favourably, the swelling of the face about this time begins to abate, and that of the extremities commences. But, if the constitution be incapable of counteracting the weakness under which it is suffering, or the mass of disease with which it is oppressed, and particularly the exacerbating or secondary fever, as it is called, which takes place at the stage of maturation, the cuticle suddenly becomes flattened, the features sink, the pustules are depressed; the coma increases, fleabite spots are sprinkled over the body, succeeded often by hemorrhages from dissolved blood; the pulse flutters, and the patient expires; usually, as already observed, about the eleventh, but sometimes not till the sixteenth day.

Remedial treatment.

In the commencement of this variety, the same reducent plan is to be pursued, as already recommended in the preceding variety; and the affusion of cold water may be added to a free use of fresh and even cold air.

Bleeding a doubtful remedy.

Bleeding is a doubtful remedy, and its propriety must entirely depend upon the constitution or habit of the individual, and the nature of the prevailing epidemy. In a state of high entonic health, and firm elastic fibre, it may

be allowed, and perhaps repeatedly: but we should always bear in mind, first, that the plenitude of the disease does not so much depend upon the strength or weakness of the frame, as upon its susceptibility of the contagion, and irritability beneath its action: and next, that in confluent small-pox the process of maturation does not take place kindly or perfectly, and that the fever, often a synochus, has always a tendency to run into a typhus, particularly when the temperament of the atmosphere predisposes to this type. On this account, it will often be found necessary, and particularly towards the stage of maturation, to support the tone of the system instead of reducing it. Camphor offers us one of the medicines for this purpose; and may be given in solution or in the form of pills. The latter is generally the most convenient, as it can thus be taken in a larger quantity, and needs not interfere with ammoniacal neutrals, etherial compounds, the acidulated decoction of cinchona, or the same tonic in a more powerful form. If, indeed, on the accession of the secondary fever, the pulse should suddenly sink, the pustules flatten, and the surface turn pallid or purple, wine must be added to the other remedies, blisters or sinapisms applied to the feet or legs; and opium be administered if a diarrhœa should supervene: though in the earlier stages of the disease this last symptom should be very cautiously interfered with. Some part of the secondary fever may probably be set down to the score of the absorbed virus, now thrown back upon the blood from every part of the surface: and to disarm this source of exacerbation it may be convenient to open the pustules as they ripen, and let them discharge their contents externally. And to save the face as much as possible from those exulcerations of the true skin that terminate in pits and scars, a mask of fine linen or cambric should be worn over it, illined with cetaceous cerate to soften the integument and defend it from the air.

GEN. III. SPEC. β E. Variola confluens. Confluent small-pox.

Tone of the system to be supported.

Camphor.

Diffusible stimulants.

Cinchona.

Wine sometimes necessary in the secondary fever: and opium: where a diarrhœa, however, it demands great caution in checking it.

Pustules to be opened as they ripen.

Small-pox, then, may well be contemplated as a fearful disease. It is so at all times from the uncertainty of its prognosis; but especially when it assumes a severe cha-

Often lays a foundation for subsequent evils.

GEN. III. SPEC. β E. Variola confluens. Confluent small-pox.

racter. And it is so, moreover, not merely on account of its own ravage, but of the tendency it produces to subsequent evils, after its own course has subsided. In many cases the constitution is incapable of recovering from the general disturbance and debility it has introduced, and hence atrophy, dropsy, and hectic are by no means uncommon results. But it more frequently proves mischievous by stirring up some hereditary taint that might otherwise lie quiet through life; and in this way becomes an exciting cause of scrophula, consumption, and gout.

γ E. Variola degener. Horn-pox. Crystalline pox.

The HORN or CRYSTALLINE-POCK, it is only necessary to notice, as forming a somewhat singular departure from the usual course of the disease, though not often accompanied with danger, or distinguished by an overloading eruption. Its pathognomic characters are set down in the Nosological Synopsis as follows: Pimples imperfectly suppurating; ichorous or horny; and semitransparent.

Peculiar marks.

Explained.

From some unknown cause, the variolous fluid is, in this variety, secreted and thrown upon the surface in the form of lymph, and is never exchanged for that of pus. As the finer part of the fluid is absorbed it loses its pellucidity, and the vesicular pimples appear whitish, and preserve this hue till they dry and peel off. This is particularly the case in persons of a fair and delicate skin, but, where the skin is darker or coarser, they become brown, hard and horny: and hence it is always in this way that the present variety terminates amongst negroes. Whenever small-pox occurs a second time, it usually shows a tendency to this modification.

With Frank a modification of pemphigus

It is not a little singular that Professor Frank should have separated this form of the disease from small-pox, and made it, together with varicella as already observed, a modification of pemphigus.* What land-mark can the student find when the boundaries of diseases are thus disastrously broken up?

δ E. Variola inserta. Inoculated small-pox.

The fourth variety under which small-pox is to be found, is the artificial modification known by the name of

* De Cur. Hom. Morb. Edit. Tom. III. p. 264.

INOCULATION: a most important advantage to mankind before they were acquainted with the equal or nearly equal protection afforded by the virus of cow-pox; when, in the language of Professor Frank, "ad illud tandem se reductos viderunt; ut victas huic pesti manus traderent, et sic, quasi dæmoni, quo sibi esset propitior, sacrificarent."*

GEN. III. SPEC. 3 E. Variola inserta. Inoculated small-pox.

Its peculiar characters are thus described in the volume of Nosology: Orange-coloured areola about the puncture; pain in the axilla about the seventh day: disease mostly mild; and the purulent discharge sometimes confined to the punctured parts.

Peculiar characters.

This mode of communicating the disease, like the natural disease itself, appears to have reached Europe from the east, and especially from China; where, according to the statements of the Jesuits,† it has been practised immemorially by perhaps the simplest and best mean of communication that has hitherto been devised, that of a needle charged with the contagious matter of a pustule, and introduced transversely under the cuticle. From China the discovery appears to have travelled into India, and thence to Asia Minor. It is not so easy to conjecture how it arrived among the ancient native tribes of Africa, as we know so little of their arriving there themselves. It shows, however, that the disease itself is of a very high antiquity, though it does not seem to have travelled in a very early period of the world into Europe; unless indeed we ascribe to it various sources of origin, which is accompanied with the difficulty of our not knowing where to stop the moment we embrace such a doctrine: for if we once indulge in a plural number, there is nothing to prevent our carrying such number on to infinity. That the disease, however, has from an early period existed in Africa, and has also been counteracted by the employment of a rude kind of inoculation, is now clear from the narrative of Mr. Campbell, whose veracity will not lightly be called in question: and who

History. Derived probably from China.

Simple mode of communication.

Early known in Africa, and counteracted by inoculation.

* De Cur. Hom. Morb. ut suprà. Tom. III. § 334.

† Lettres Edifiantes et Curieuses, &c. passim.

GEN. III. SPEC. δ E. Variola inserta. Inoculated small-pox.

tells us that he found both the small-pox and the practice of inoculation in use among the Marootzee, or inhabitants of the city of Kurreechane about a degree and a half to the northward of De la Goa Bay, or 24½° south latitude. Here the rivers, which before ran westward, were found to flow towards the east, evidently proving that he had reached the loftiest point of this part of the continent. The natives, it seems, have a tradition that they procured the variolous matter, or rather learnt the art, from a people to the north-east called Mahalatyela, who ride upon elephants. They make the incision between the eye-brows. The Booshuanas, however, inoculate for the small-pox also.*

Practised at an early age in our own country:

The first employment of inoculation in our own country seems to have been the result of some fortunate observation, made, like that of cow-pox inoculation, in the rudest parts of it; for the practice of "buying" the small-pox, which was in fact a communication of the disease by insertion, was prevalent in Wales at a very early period, and appears to have been also occasionally resorted to in the Highlands of Scotland, from an antiquity nearly as remote; of which abundant proofs are to be found in various articles in the Philosophical Transactions.† All such practice, however, and even the knowledge of it, seems to have been confined to the remote quarters in which it accidentally arose, as late as the year 1721, when Lady Mary Montague who had witnessed its success in Turkey, and had had a son successfully inoculated there, submitted an infant daughter to the same process at this time in London. Yet so little acquainted with its success were the public, and even the medical profession, at this period, and so cautious in giving it credit, that an experiment of its effect was ordered to be made in the same year on six condemned criminals, all of whom were fortunate enough to recover, and who thus redeemed their lives. This gave countenance to

in Wales, and remote provinces:

also in the Highlands of Scotland.

Introduction to general notice by Lady M. Montague.

Tried first on condemned criminals: who recovered.

* Travels in South Africa, &c. 2 Vols. 8vo. 1822.

† See Vol. XXXII. years 1722-3. and especially Dr. Williams's account.

GEN. III. SPEC. ♂E. Variola inserta. Inoculated small-pox.

further attempts; yet the innovation, like that of inoculation from cow-pox, was sharply and pertinaciously opposed, and not more than seven hundred and sixty-four persons, according to Dr. Jurin's calculation, were inoculated all over England from 1722 to 1727.

But the use of inoculation violently opposed.

Unfortunately the practice of treating the disease with cordials and a hot regimen at this time prevailed, and was too generally applied to the inoculated as well as to the natural process, by means of which the former was often rendered a severe and in many cases a fatal disease; though it was impossible for the dullest intellect to be altogether insensible to its high comparative advantages. By degrees, however, the refrigerant and reducing plan obtained a triumph, and the triumph of inoculation was a synchronous step. Yet half a century afterwards the exploded plan was still persevered in by some practitioners, and it is instructive to mark the comparative mischief that still accompanied it. "I found," says Sir George Baker, writing in 1771, "that in the counties of Essex, Norfolk, and Suffolk, many thousands of people, of all ages and constitutions, and some of them, of every apparent disadvantage, had been inoculated with general good success: whereas at Blandford, in Dorsetshire, out of three hundred and eighty-four persons, who were inoculated, thirteen actually died, and many others narrowly escaped with their lives from the confluent small-pox."* This gives us a direct mortality of something more than one in thirty; and it is almost needless to add, that in the successful districts here alluded to, the cooling plan was prevalent, and at Blandford that of hot beds and a warm regimen.

Injured also by the mischievous treatment adopted: which gradually gave way to a more rational plan.

Wonderful improvement upon the natural disease.

Even this result, however, with all its fatality offers a wonderful improvement upon the march of natural small-pox; in which one out of every three or four have been computed to die among adults, and one out of every seven among infants; while, wherever the cooling and reducent

* Med. Trans. Vol. II. Art. XIX. Compare M. Gatti's Nouvelles Reflexions sur la Pratique de l'Inoculation. Paris 1770.

GEN. III. SPEC. E. Variola inserta. Inoculated small-pox.

plan has co-operated with inoculation, the casualties are not more than one in five or six hundred.

Yet great as is the intrinsic advantage of inoculation even upon its lowest scale, there is one evil which has always accompanied it, and which, in a nation so justly proud of its civil liberties as Great Britain, it is almost impossible to provide against; and that is the wider diffusion of variolous contagion through the atmosphere by the indiscriminate use of inoculation in all places. And hence it has been very forcibly observed in our own day by those who have written most warmly in favour of vaccination, that small-pox inoculation is upon this ground a greater public evil than good; since the multitude who will not consent to be inoculated, receiving the natural disease more generally than they otherwise would do, the total mortality is greater than before inoculation was had recourse to. I was at first induced to think that this statement was a little too highly coloured for a particular and present purpose. But on turning to Baron Dimsdale's tables of calculation drawn up nearly fifty years ago, I find him arriving at the very same conclusion; and we may fairly affirm that the deaths from small-pox, since the introduction of inoculation, have increased in consequence of the more extensive diffusion of variolous contagion in the proportion of fourteen or fifteen upon every hundred. The bills of mortality indeed give us something more than this.

Yet injurious from the wider diffusion of variolous contagion:

and hence producing a greater average of mortality than the natural disease itself.

By what means variolous contagion received by a puncture becomes so much milder than when received from the atmosphere is a problem that has never been satisfactorily solved. Something is unquestionably due to the preparatory progress of purgatives and a reducent regimen; but, as the same mildness of character does not obtain in the natural disease, where the same preparation has been submitted to antecedently, some other power must be sought for. Under inoculation, and with the usual precautions, the eruption is commonly distinct and widely scattered; yet the most striking character in the inoculated form is that when the eruption is full, and even

Whence the greater mildness of inoculated than natural small-pox.

GEN. III. SPEC. ß E. Variola inserta. Inoculated small-pox.

confluent, the secondary fever, so alarming in the natural disease, is here for the most part slight, and sometimes altogether absent. This exacerbation is usually ascribed to an absorption of the contagion from the pustules; but the feature before us shows that there must be a something distinct from absorption, though perhaps acting in union with it. Is the virus from the first less irritant, and less capable of exciting much secondary fever, for the very reason that it was less capable of exciting much primary?

The inoculated form without secondary fever or even when confluent.

It is on this account that variolous inoculation may be submitted to, without danger, by feeble infancy, advanced age, and even cachectic habits in every stage of life; and that the season of the year does not seem to be a matter of great importance. Pregnant women, however, ought never to be exposed to it, nor infants, where there is a choice, till after the irritation of teething.

Inoculation hence safe in infancy and old age.

Should not be performed on pregnant women, nor infants while teething.

The operation is perfectly simple; the needle originally employed in the East is as good an instrument as any, though the lancet is preferred in general. It is only necessary to deposite a minute drop of the contagion under the cuticle, or at least to make such a wound as may give forth a single drop of blood. It is preferable to take the fluid before the pustule suppurates; as afterwards it seems to partake of the nature of common pus as well, and produces a larger circle of inflammation, and on this account also it cannot so fully be relied on. The puncture does not so completely disappear as in that with vaccine fluid, but it is often scarcely visible for three or four days. At this period, a minute papula may be traced, a little itching is felt, and sometimes there is a slight inflammation. On the sixth day, a pain and weight are felt in the axilla, proving that the lymphatics of the arm have become affected, and that the virus is conveyed into the system. On the seventh or eighth day, the precursive symptoms of transient shiverings, head-ache, and pain in the back are perceived, and immediately followed by the eruption itself; though mostly in this mild form of the disease the only eruption, as in the inoculated vaccinia, is the pustule on the puncture or a few which directly surround it. Where-

Mode of operation: fluid should be taken before suppuration.

Progress of the inoculated disease.

GEN. III. SPEC. δ E. Variola inserta. Inoculated small-pox.

the disease spreads itself in this manner the local efflorescence commonly spreads over a larger area than otherwise, and the adjoining lymphatics participating in the irritation, the tenderness and sense of weight are increased in the axilla. Where the symptoms are unfavourable, there is a purplish, instead of a rosy inflammation, or a narrow, deep red, circle surrounding the puncture, with a dip or depression in the pustule.

Unfavourable prognostic.

Treatment.

The treatment is to be the same as that already pointed out for the natural disease: but it should vary with the habit, constitution, or age of the individual. Sufficient attention was not always given to this remark formerly: for the preparatory regimen was a bed of Procrustes to which every one was alike compelled to adapt himself. Sir George Baker openly complained of this inconsistency in his own day;* but it was very generally continued notwithstanding his censure.

* Med. Trans. Vol. II. p. 282.

GENUS IV.

ANTHRACIA.

Carbuncular Exanthem.

ERUPTION OF TUMOURS IMPERFECTLY SUPPURATING WITH INDURATED EDGES, AND, FOR THE MOST PART, A SORDID AND SANIOUS CORE.

GEN. IV.

THE present genus, denominated ANTHRACIA, from ἀνθρακ, "a burning coal," by its definition embraces two diseases of very different specific characters, though closely according in their generic marks. These are,

1. ANTHRACIA PESTIS, PLAGUE.
2. ——— RUBULA, YAWS.

Proper station of these species disputed.

There have been, however, and still continue to be, great disputes among the nosologists, as to the proper station of both these species; many contending that plague ought not to be regarded as an exanthem, and most writers having hitherto contemplated yaws as an impetigo, or some other dysthetic affection. Dr. Cullen has expressed a doubt whether the first should not be removed from the order of exanthems into that of fevers; Vogel has actually introduced it into this last order; Willan has rejected it from the exanthems. Parr arranges it as an exanthem, in his article *Nosology*, having previously, like Willan, rejected it from that division in his article *Cutanei Morbi*. In his remarks subjoined to the article *Nosology*, he again acknowledges that "on reflexion it appears improper" to introduce it into the list of exanthems; and in his article *Pestis*, he asserts more roundly that "there is no foundation for arranging plague amongst the exanthemata; and that it should be reduced to the asthenic remittents." Sauvages, Linnéus, Sagar,

GEN. IV. Anthracia. Carbuncular exanthem.

and Macbride have entered it in the order in which we have placed it in the present system.

Reasons for assigning to plague its present place.

In few words, there appears strong and almost incontrovertible reason for thus placing it. The fever, as will presently be shown, is eruptive, and as specifically so as that of any of the exanthems; it is contagious like most of them; and, although frequently occurring oftener than once in a man's life, we have the concurrent testimony of all the writers, who have been eye-witnesses of its effects, that it renders every one less susceptible for a certain period afterwards, and some for the whole term of their existence.

Reasons for assigning to yaws its present place.

With respect to yaws, the diversity of opinion has been quite as considerable as that respecting plague. Generally speaking, it has been placed in the loose and indeterminate class which has been distinguished by the name of cachexies; Sauvages and Sagar arrange it in the order tubera of this class; Cullen in that of impetigines. These writers take little or no notice of any kind of febrile features that accompany it whether specific or sympathetic. Dr. Young pays as little attention to the febrile symptoms by which it is said to be distinguished, and at the same time transfers it from the division of cachexies (*cacochymiæ* as he denominates them) to the order of paramorphiæ or structural diseases. Dr. Winterbottom, and Dr. Dancer, on the contrary, contend that a slight fever is its primary symptom; and Dr. Ludford, to whom we are indebted for, perhaps, the best history which has yet been given of this disease, describes it as a proper eruptive fever, totally unconnected with diet, lues, or any other taint in the blood; commencing with alternations of shivering and heat, lassitude, want of appetite, and pains in the head and loins to so great a degree as to prevent sleep; the fever and every inconvenience diminishing after the eruption, and the appetite returning. So that, like small-pox, it appears to have a regular accession, height, and decline; and, as already observed, may be propagated by inoculation; and is never known to occur a second time. Hence Parr, who seems to have long wavered in his opinion con-

cerning the real nature of this disease, regarding it at one time as a *pustulous exanthem*, and afterwards as a mere *cuticular intumescence*, returned, at last, with a decided mind to his first opinion, and again asserts that "the detail of symptoms shows that the disease is truly exanthematous."

GEN. IV. Anthracia. Carbuncular exanthem.

This view of the subject will therefore abundantly justify the present arrangement of both these diseases; support their pretensions to the character of carbuncular exanthems; and consequently develope the nature of the connection of yaws with plague, under a nosological method founded on the principle of symptoms. In their individual or specific characters they are indeed highly discrepant, but this is not sufficient to call for a separation, while they agree in the common outline that may form the basis of a generic division. The tall and stately acacia of Egypt and the delicate sensitive plant of our own green-houses belong to the same genus in botany, however inaccordant they may appear to the eye of an ordinary spectator.

Hence both diseases carbuncular exanthems:

and though widely different upon many points, coincide in a common generic outline.

SPECIES I.

ANTHRACIA PESTIS.

Plague.

TUMOURS BUBONOUS, CARBUNCULAR OR BOTH; APPEARING AT AN UNCERTAIN TIME OF THE DISEASE: EYES WITH A MUDDY GLISTENING: FEVER A MALIGNANT TYPHUS, WITH EXTREME INTERNAL HEAT AND DEBILITY: CONTAGIOUS.

GEN. IV. SPEC. I. No longer known in our own country; nor existent since 1679.

IT is happy for us, that, in describing this dreadful scourge, we are under the necessity of referring to foreign countries, or to remote periods in the history of our own, before the great advantage of public cleanliness and ven-

GEN. IV. SPEC. I. Anthracia Pestis. Plague.

tilation in our streets was sufficiently attended to or even known. The earliest visitation of the plague that occurs in English history was in the year 430; the last time it appeared as an epidemic was in 1665, and the last notice of it in the bills of mortality was in 1679. In Edinburgh it has not prevailed subsequently to 1645: long since which period of time it has repeatedly ravaged all the continent of Europe, East, West, North, and South.

In Edinburgh, not since 1645.

From the diversified and clashing accounts that are given of this disease by different writers and eye-witnesses in different ages, or different parts of the world, we are justified in laying down the three following varieties; which, while they offer the chief points of discrepancy, will be found in their explanation to reconcile the seeming discordancies of established authorities.

α Fructifera. Common plague.	The disease extending to about the fourteenth day; and relieved by the appearance of the eruption.
β Infructifera. Uneruptive plague.	The eruption imperfect or suppressed; transferred to some internal organ; or superseded externally by stigmata and vibices.
γ Erythematica. Erythematous plague.	The body covered over with trails of vesicular erythema, producing deep, sanious, and gangrenous ulcerations as it spreads, often to the loss of one or more limbs.

The whole of these varieties sometimes co-existing. All of them in the Aleppo plague 1660-1-2.

The whole of these varieties have sometimes been exhibited in the same epidemic; the last, however, is the least frequent, whether alone or in conjunction with the rest. All of them appear to have been present and intermixed in the Aleppo plague of 1660-1-2, so clearly and strikingly described by Dr. Patrick Russell, physician at the time to the British factory established at

GEN. IV. SPEC. I. Anthracia Pestis. Plague.

that city: for he speaks of the pestilential eruptions appearing under the form of buboes, carbuncles, or OTHER exanthemata; among which last he takes particular notice of an erysipelatous redness forming streaks of a reddish purple or livid colour, intermixed with vibices and wheals, or large blue and purple spots, the maculæ magnæ of authors; while, in some cases, he observes that an extraordinary concurrence of these eruptions took place, which, however, was chiefly remarked among children under ten years of age.

The first and second varieties in the Barbary plague of 1799, 1800.

In the Barbary plague of 1799 and 1800, so fully and excellently described by Mr. Jackson,* who was an eye-witness to its effects,—the first and second of the two varieties here offered, the fructiferous and infructiferous, were intermixed, while the erythematic seems to have been absent.

Probably also in the plague of Moscow of 1771.

It was probably absent also in the plague of Moscow of the year 1771, as it is not noticed by Dr. Mertens, who gives a full description of both the other modifications.

All occasionally occurred in the London plague of 1665: but mostly the first and second:

In the London plague of 1665, all of them seem to have occurred occasionally; the first and the second, however, most frequently, examples of which are to be found in Hodges, Sydenham, Sir Gideon Harvey,† and indeed all the writers; while, in allusion to the last, Sydenham compares the inflammation of the plague, as it often appeared, to that of an ignis sacer, by which he means an erysipelas; in which, nature, he tells us, expels the matter of the disease from the blood to slightly elevated tumours dispersed over the surface in broad red patches: only that this *ignis*, says he, is more violent, than the ignis sacer:‡—"*ignis noster isto sacro longè divinior est.*"

as also at Noya in 1815.

They seem also to have co-existed in the Neapolitan plague or rather that of Noya in 1815, for the police regulations,§ as well as the medical descrip-

* Account of the Empire of Morocco, &c. 4to. 1809.

† City Remembrancer, passim.

‡ Febris Pestilens, et Pestis Opp. Sec. II. Class II.

§ Giornale di tutti Atti, Discussioni, e Determinazione della Sopra-intendenza Generale e Supremo Magistrato del Regno di Napoli, &c. Napoli 1816.

GEN. IV. SPEC. I. Anthracia Pestis. Plague.

tions, have a reference to each of these in very distinct terms.*

In the plague of Athens, on the contrary, as described by Thucydides and Lucretius, we are not sure of the existence of buboes, as not being distinctly noticed, though probably included in the inflammations that are stated to have fallen upon the privities (*τα αιδοια*), while the last two varieties were perpetually intermixed; the chief eruption, however, being that of the vesicular erythema, the sacer ignis, or holy fire, as observed by Sydenham. In consequence of which Thucydides tells us, that, "the surface of the body was neither violently hot nor wan; but reddish, livid, and covered over with an efflorescence of minute vesicles and ulcers,"—*φλυκταιναις μικραις και ελκεσιν*:—but that the interior parts were so burning that the sick could not endure the lightest covering or clothes, and eagerly threw themselves into cold water. And he adds that the disease, in its ulcerative progress, commencing in the head or the upper parts of the body, migrated over the entire frame, and often fixed itself permanently on the sexual organs, the hands, or the feet.† The whole of which course is by Lucretius described under the express name of *sacer ignis*, or *holy fire*.

In the plague of Athens the third variety chiefly found.

Et simul, ulceribus quasi inustis, omne rubore
Corpus, ut est, per membra SACER quom diditur IGNIS.‡

Severe plague at Rome in the second century: evinced all the varieties, like that of Athens.

One of the severest attacks of plague with which Rome was ever afflicted, was that which made its appearance about the middle of the second century of the Christian era, and is supposed to have been introduced into Italy by the army of Lucius Varus, on its return from Parthia. It is loosely but frequently glanced at by Galen, who adverts on different occasions to various cases in which he was consulted. It was a direct counterpart of the Athenian plague, and hence we meet with all the characteristic symptoms just enumerated. "The body," he tells us,

* Ragguaglio Istorico della Peste sviluppata in Noya nell' anno 1815. Napoli 1816.

† Hist. Lib. II. 50. ‡ De Rer. Nat. VI. 1164.

"was stigmatised with ulcerating eruptions* (ἐξανθήσιν ἕλκεσιν), which were often livid and ramified in every direction; whilst there was no increase of heat to the touch, even when the patient felt as if burnt up with an internal fire.—The discharge from the bowels was, at the beginning, and during the augmentation of the disorder, yellow or reddish, but afterwards black, like dregs of blood.† The pulse was, in many instances, not much affected, but there was great thirst and an urgent desire for cold-water." And he adds, shortly afterwards, a symptom distinctly noticed by Thucydides and Lucretius, "that from the peculiar stupor of the head, the patient for a long time afterwards, knew neither himself nor his friends around him."‡

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Eusebius has given us a similar account of the tremendous plague which raged over Syria, A.D. 302, in which, however, he more expressly notices that the SACER IGNIS was intermixed with the CARBUNCLES, and made a dreadful havoc on the bodies even of the few who lived through the disease; very generally fixing upon their eyes and rendering them totally blind.§ In the correct rendering of his interpreter Ruffinus, "Aeris quoque temperies in tantam corruptionem versa est, ut humana corpora ulceribus pessimis, quæ IGNIS SACER appellantur, necnon et his qui dicuntur CARBUNCULI, replerentur, ita ut ora hominum atque oculos occuparent, et ut siquis forte ex his effugisset mortem, luminibus orbaretur."

A like attack in Syria A.D. 302. peculiarly marked at times by carbuncles and sacer ignis.

In the still severer and more extensive plague which prevailed in the reign of Justinian A.D. 540, and which ravaged the greater part of Europe and Asia, for at least half a century, all the varieties enumerated in the present classification, appear to have either co-existed or alternated. It commenced however according to Agathias "in its old form," or with buboes as a prominent and early symptom; which chiefly appeared, as Procopius tells us,

In the reign of Justinian, A.D. 540: evinced all the varieties, but commenced in its old form.

* Meth. Med. Lib. II. Cap. XII. † De Præsag. ex Pulsû, Cap. IV.

‡ De Præsag. ex Pulsû. Cap. V.

§ Hist. Eccles. Lib. VII. Cap. XVII. IX. Cap. VIII

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in the groins, the arm-pits, or behind the ears, and were attended with violent fever and stupor or phrenitis. "The carbuncle," he adds, "did not always show itself, but, on opening a patient's body after his decease, it was detected in an incipient state." Yet from the diversity of character the disease at length assumed in different individuals, and after it had spread to an illimitable extent, we are informed by Evagrius that, though it still continued to be regarded as one and the same malady, it seemed to consist of numerous disorders. In some, like the Athenian plague, as already copied from Thucydides, it commenced in the head, inflamed the eyes, and tumefied the face, then descended into the throat, and destroyed them. In others there was a violent flux: and in others again buboes arose accompanied with a most malignant fever. Not unfrequently the patient died on the second or third day with little mental or corporeal suffering. Some became comatose, and suddenly perished in this state; while an efflorescence of the ignis sacer destroyed multitudes.

The erythematous variety often called by the Greeks by way of distinction anthrax or anthrace: and by Willan conjectured to have been confluent small-pox.

Dr. Willan, in his posthumous volume published by Dr. Ashby Smith, has taken great pains to shew that the last or erythematous variety, which, by the Greek physicians, was often distinguished by the specific name of ANTHRAX or ANTHRACES, was the confluent and ulcerative small-pox of the present day, which he conceives was as well known to the Greeks as to ourselves. It is not necessary to go over this question again, as the author has already examined it at large in the section on VARIOLA,* where he has endeavoured to prove that we have no real ground for believing that either the Greek or Latin physicians were acquainted with this last disease under any form. It is sufficient for the present purpose to remark that, even in what may be called our own times, both these diseases, the small-pox and erythematous plague, have made their appearance at different dates in the same countries, and under the eye of the same physicians—men whose skill and judgement have received the homage of universal as-

Question already examined and disposed of.

Fully disapproved in modern times.

* Suprà, p. 95.

sent—who have never dreamed of confounding or amalgamating them, but have distinctly described the one as a variety of proper plague, and the other as the small-pox in the ordinary sense of the term; each produced by its own specific contagion, and keeping true to its own symptoms and progress. Such are both the Russells, Forestus,* Diemerbroeck, Geofroy of Provence,† Gotwald of Dantzic, Hodges, and, as already observed, Sydenham. The trailing vesications, which constitute the erythematous variety, are called PAPULÆ ARDENTES by Gotwald, in describing the Dantzic plague, which term Dr. Goodwin has correctly translated FIRE-BLADDERS. In their origin, however, they were often as minute as a millet seed, and when larger were, in Holland, denominated GRANUM PIPERIS.

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Papulæ ardentes of Gotwald.

Fire-bladders of Goodwin.

Granum piperis.

There was sometimes a difficulty in distinguishing these, where they were of larger magnitude, from the proper carbuncle; whence, by many writers, the two are confounded, or described under a common name. Hodges very properly made a distinction between them, but Forestus and Gotwald arrange them as only modifications of one and the same eruption, and Dr. Patrick Russell seems partly inclined to contemplate them in a similar light, though he speaks doubtfully. "The same eruption," says he, "appears under various forms, as it happens to be viewed in its different stages; and hence, perhaps, the varieties of the carbuncle have sometimes been erroneously multiplied. I will not be confident of not having fallen into the like mistake."‡

Properly distinguished from the carbuncle by Hodges: but not by Forestus and Gotwald: nor quite accurately by P. Russell.

Gotwald makes not less than four varieties of the carbuncle, as he traced it in the plague at Dantzick in 1709. It is the last of these that constitutes the erythematous form before us. "It is," says he, "the most curious, as Purman in his Treatise of the Plague, has well observed, Sitorius calls them pale, livid, ulcerous, papulæ: they

Carbuncular varieties of Gotwald.

Papulæ of Sitorius.

* Lib. VI. Obs. xi. xii. Schol. † Traité de la Peste, pp. 1, 436.

‡ Treatise of the Plague, Book I. Chap. IV. p. 121.

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appear with a high, yellow blister, which seems full of corruption: the circle round it is first red, then of an ash colour: the blister soon falls, and, with the carbuncle, appears scarce so big as a pepper corn, *continually eating deeper and wider.*"*

Forestus.

To the same effect Forestus. "Carbunculus ferè autem oritur ex pustula exili, milii seminis magnitudine: interdum vero multi prosiliunt, primò quidem pruritû, deinde rubore, ardore, doloreque vehementi. Hoc verò sensim increscente, pars uritur, crustosumque ulcus *quasi candenti ferro* inducitur, idque vel nigrum, vel cinereum."† To which he adds in another place, "et in ore eorum cernes aliquid pestilentis coloris cum partim *erysepelatosum*, partim colorem habent *depascentibus serpentibus similem per plures partes diffusam.*"‡ And in

Hodges.

proof that the same variety of eruption did occur also in the plague of London, to the testimony already offered of Sydenham, it will be sufficient to add the following of Hodges. "There were occasionally," says he, "vesications of size from a pea to a nutmeg encompassed with a variegated circle, generally reddish. They arose with exquisite and shooting pain, and *contained an ichor of a yellowish or straw* colour, which was *so acrid or caustic that it soon corroded the vesicle* and burst out, of a colour yellowish, livid or black. These pustules broke out in many parts of the body; their station and number being uncertain: sometimes few, sometimes many: in one case *the whole body was covered all over with them.*"§

A general conclusion.

It is impossible that these writers could be mistaken in the nature of the complaint, and have regarded that as plague which was really small-pox: and as they describe, in these passages, the very liniments of the Athenian plague and other erythematous forms of it among ancient nations, there is no reason whatever for conceiving the physicians of Greece and Rome to have been more deceived than those of recent times.

* Historical Account of the Plague, &c. By N. Goodwin, M.D. London 1743. p. 49.

† Lib. VI. Obs. xi. Schol. ‡ Id. Obs. xii. Schol. § Loimolog. p. 110.

The greater part of these passages precisely correspond with the character of the erysipelas *pestilens* of Lorrain, delineated under this name by Sauvages, who has copied freely both from Sydenham and Hoffman; but which, though he calls it an erysipelas, had, as he admits, the closest affinity with plague in its most malignant form, "cum atrocissimo morbo pestilenti summam affinitatem habet;" and was in reality this disease in the form before us. "Each," says he, "commences with horror, burning heat, delirium, prostration of strength, vehement pain of the back and head; in each the burning matter of the disease breaks forth on the fourth day on the axillary or inguinal glands, and spreads to the feet in the form of the ignis sacer: in the glands it produces abscesses; in the extremities, gangrene." It is the mal des ardens of the French writers; and, in its malignant variety, the erysipelas *gangrænosum* of Willan. Much of this difference, however, seems to be dependent upon local or accidental circumstances, and especially upon the state or constitution of the atmosphere. Thus we are told by Sir James M'Gregor, that when the plague first broke out in the Indian army in the course of its laborious expedition to Egypt, the cases sent from the crowded hospitals of the 61st and 88th regiments were, from the commencement, attended with typhous symptoms: while those from the Bengal volunteer battalion and the other corps encamped near the marshes of El-Hamed, evinced uniformly an intermittent or remittent type; and those that occurred in the cold and rainy months of December and January, an inflammatory character; after which, as the weather became warmer, the disease at Cairo, Ghiza, Boulac, and the isthmus of Suez, wore the form of a mild continued fever.*

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Synonymous with Sauvages' erysipelas pestilens:

and the mal des ardens of the French writers.

Discrepancies in the varieties accounted for.

The plague of London in 1665 was, in like manner, distinguished by a peculiar constitution of the atmosphere, which excited an epidemic synochus of great violence and danger, often accompanied with symptoms of rheumatism or pleurisy, and which seems to have added

Plague of London distinguished by a peculiar constitution of the atmosphere.

* Medical Sketches of the Expedition, &c.

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considerably to the progress and mortality of the plague. Sydenham expressly calls it a pestilential fever, *febris pestilentialis;* and adds that the fever of the plague, after it had broken out, so completely assimilated itself to its character, that, in the second or infructiferous variety, it was extremely difficult to distinguish between the one and the other.*

In like manner Thucydides expressly tells us that whatever incidental complaint any person was labouring under during the plague at Athens, it was sure to run into this disease, which swallowed up every other. Yet he adds, that at the commencement of the plague, complaints of all kinds were peculiarly uncommon; insomuch that by the acknowledgement of every one, the year seemed to have enjoyed a general immunity.†

Its course, height and decline.

The plague at London first attracted attention about Midsummer, and augmented in its destructive ravage till the autumnal equinox, at which time about eight thousand died within the bills of mortality in the space of a week, though two thirds of the inhabitants, at least, had fled into the country to avoid the infection. From this time it suddenly put on a milder character and made fewer attacks, nearly ceased, as is uniformly the case with the cold of the winter, and totally vanished by the spring: the epidemic fever, nevertheless, remained for a twelvemonth longer, though this, also, was both less common and less virulent.

Proper temperature of plague.

It is remarkable though, as Sir Gilbert Blane observes, incontestibly established by the experience of ages, that the disease of the plague cannot co-exist with a heat of atmosphere above 80°, nor a little below 60°.‡ It never fails to disappear in Egypt at the summer solstice, the heat being then pretty uniformly at 80° or upwards. Its chief prevalence therefore, is in Lower Egypt. It is almost unknown in Upper Egypt; totally so in Abyssinia, in Mecca, and the southern parts of Arabia. On the contrary, it appears from the history of all the plagues of

* Sect. II. Cap. I. † Hist. Lib. II. 49. ‡ Select Dis. &c. p. 314. 8vo. 1822.

which there is any account in England, that they have never begun to appear epidemically but in the end of June or about the beginning of July; that they proceed increasing till September, when they are at their acmé, and then decline till they entirely subside in winter, with the exception of a few sporadic cases.* The influence of temperature is, indeed, striking in numerous diseases, and even in many of those that issue from a specific contagion, of which we have already given an impressive example in its effects on syphilis in the West Indies.

Like controlling agents to be found in all quarters.

The same controlling circumstances take place all over the world; and in studying the history and progress of the disease we must allow for the changes they effect. Dr. Mertens has well described this progress in the plague of Moscow of 1771, at which time he presided over one of the largest hospitals of the imperial capital, and was an eye-witness to its ravages.† Having noticed its liability to modifications from the above causes, he tells us that in general, it begins with head-ache, giddiness, horripilation, prostration of strength, fever, nausea, vomiting, redness of the eyes, a dejected countenance, and a white foul tongue. A tickling attended with slight pains is perceived in the parts where the buboes and carbuncles afterwards break out. "The former," says he, "are glandular swellings, not acutely painful, and more or less elevated; usually seated in the groins or arm-pits, but occasionally occurring in the neck, cheeks, and other organs of the body." The latter he describes very nearly in the words already employed in the specific definition of the carbuncle or anthrax in the preceding pages of this work, though he observes, that "in the plague this tumour evinces somewhat less prominence, pain, and inflammation, than when it arises as an idiopathic affection."

Symptoms as they occurred in the plague of Moscow.

Prognostics

"Many," he tells us, "died on the first or second day of the attack, before either of these kinds of tumours made their appearance." In such cases, an eruption of petec-

* Select Dissertations, &c. p. 314. 8vo. 1822.

† Observationes Medicæ de Febribus putridis, de Peste, nonnullisque aliis morbis. Vindebon. 1778.

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chiæ, maculæ or vibices, like what occur in putrid fevers, usually took place a few hours before death; but sometimes the disease was so sudden as to outstrip the march of these active precursors of dissolution. Almost all who died were cut off on or before the sixth day: insomuch that those who reached the seventh were pronounced to be out of danger.

Origin and mortality.

The disease was introduced into Moscow by a communication with the Turkish army: it made little progress during the earlier part of the year, but became fearfully fatal with the advance of summer, and gradually died away with the frost. The mortality was tremendous. Seventy thousand inhabitants were cut off in a few months, twenty-two thousand in a single month, and sometimes twelve thousand in twenty-four hours. Notwithstanding which, by cautiously blocking up every avenue, except one, to the large hospital over which he was appointed physician, and keeping a strict and constant guard at the entrance thus left open, although the building was in the midst of the city, it was maintained perfectly free from infection, while the disease raged around it in every quarter.

Advantage of a strict separation from the infected.

Plague at Morocco accordant with the above description.

Mr. Jackson's account of the plague at Morocco is in perfect consonance with this description, though it contains a feature or two in addition, which probably became more prominent from the higher temperature of the atmosphere. "The symptoms of this plague," says he, "varied in different patients; the variety of age and constitution gave it a like variety of appearance and character. In some it manifested itself by a sudden and violent shivering, in others by a sudden delirium, succeeded by great and unquenchable thirst. Cold water was eagerly resorted to by the unwary and imprudent, and proved fatal to those who indulged in its momentary relief. Some had one, two, or more buboes, which formed and became often as large as a walnut, in the course of a day; others had a similar number of carbuncles; others had both buboes and carbuncles, which generally appeared in the groin, under the arm, or near the breast. Those who were affected with a shivering, having no bubo, carbuncle,

spots (vibices or maculæ latæ), or any other disfiguration (eruption), were invariably carried off in less than twenty-four hours; and the body of the deceased became quickly putrefied, so that it was indispensably necessary to bury it in a few hours after dissolution.

Rapid putrefaction.

"The European merchants shut themselves up in their respective houses, as is the practice in the Levant. I did not take this precaution, but occasionally rode out to take exercise on horseback. My daily observations convinced me that the epidemy was not caught by approach, unless that approach was accompanied by an inhaling of the breath, or by touching the infected person."

Miasm spreading to only a small distance from the deceased.

This last remark is in strict agreement with the observations of the best medical writers of modern times who have witnessed the disease in different countries and climates: and the wholesome practice of drawing a line of demarcation, and thus cutting off all communication with the sick, is founded upon the same view. M. Assalini traces the progress of the plague among the French army in Egypt with great care, and asserts that even those who associated with the sick were seldom infected unless inmated in their rooms: and instances the small degree of danger there is from casual intercourse, by showing how very rarely the medical attendants suffered. Dr. Frank the younger, who was with the French army at the same time, visited his patients closely and frequently, but never ventured to feel their pulse.*

Remarks coincident with general observation.

Yet fresh persons are far less safe than the stated inhabitants of an infected place, who have been gradually inured to the influence of the morbid miasm. "Families," says Mr. Jackson, "who had retired to the country to avoid the infection, on returning to town, when all infection had apparently ceased, were generally attacked and died. After the mortality had subsided at Mogadore, a corps of troops arrived at the city of Terodant in the province of Suse, where the plague had been raging, and had

Fresh persons less safe than those accustomed to the miasm.

* De Peste, Dysenteria, &c. 8vo. Vienn.

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subsided: these troops after remaining three days at Mogadore, were attacked with the disease, and it raged *exclusively* among them for about a month, though they were not confined to any particular quarter, many of them having had apartments in the houses of the inhabitants of the town."

Tremendous mortality.

As in the plague of Athens and of London, "the mortality," continues the same author, "was so great that the living not having time to bury the dead, the bodies were deposited or thrown together into large holes, which, when nearly full, were covered over with earth. Young, healthy, and robust persons with strong stamina, were, for the most part, attacked first, then women and children; and, lastly, thin, sickly, emaciated, and old people." The depressing passions of fear and grief had also a strong predisposing effect: a few suffered twice. Morocco lost a thousand upon an average daily, when the infection was at its height, being about the maximum that fell at London; Old and New Fez, from twelve to fifteen hundred: Terodant, about eight hundred. The total loss sustained in these three cities, and in Mogadore, was estimated at one hundred and twenty-four thousand five hundred souls: not quite equalling, however, the mortality that desolated the Coast of Provence from the same disease in 1720-1, and particularly the three towns of Marseilles, Toulon, and Aix, in which the first of these lost half its inhabitants in a short time, and the second sixteen thousand out of a population of twenty-six thousand: the destruction throughout the entire province amounting to two hundred thousand souls: but this was before the laws of quarantine were perfected and rigidly carried into execution. Dr. L. Frank calculates the average population of Cairo at three hundred thousand; and its annual mortality from plague at seven thousand: yet when the disease proves very mild he thinks it may not be more than a fifth part of this.*

* De Peste, &c. ut suprà.

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In the regular progress of the disease, buboes make their appearance first, and about the second or third day from the attack; then carbuncles and ignis sacer, if either of these occur at all; and, lastly, as the danger increases, petecchiæ and vibices. But, as already observed, where the plague shows great malignity from the first, it opens with petecchiæ and vibices, and sometimes kills in a few hours, even before these have time to appear.

Order of eruption, buboes, carbuncles, holy fire and petecchiæ.

Buboes, in the opinion of all the practical writers, or nearly without an exception, are a critical mark of the disease, and the natural means of conducting it to a favourable termination: "but in order," says Mertens, "to their proving beneficial, they must undergo perfect suppuration." In many instances they neither inflame nor become painful: and in others they suddenly disappear after having reached the size of walnuts. In the former case they afford no relief, in the latter death is almost sure to follow speedily. The earlier they make their appearance the better; and upon a free suppuration they certainly render the patient less susceptible of the disease afterwards. In the opinion of M. Sotira, indeed, and of most of the French medical staff appointed to the Egyptian expedition, they prove an indemnity for life: yet the examples of a second attack are too numerous to allow us to adopt this opinion as a general rule.

Buboes a critical and favourable mark: but to this end should be perfectly suppurated: and then afford the surest indemnity against a future attack.

Mr. George Smith, surgeon of the Russian Imperial Land-Cadet corps of nobles, was twice a sufferer from the plague at Bucharest in the year 1772, as I think, and had the rare privilege to recover from both assaults. But that an exemption for a considerable term of time is hereby very generally obtained, is established by innumerable examples; of which M. Mathias Degio, one of the surgeons attached to the same establishment affords us a striking instance in his own person. "Perceiving," says Dr. Guthrie, "the gentlemen of his profession condemned, in a manner, to death if punctual in their duty, he had the resolution to inoculate himself for the plague in a full confidence of its efficacy; and ever afterwards found himself invulnerable, while his companions around

Disease sometimes returns: but the exemption sometimes perfect

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him were falling victims to its fury."* And to the same effect we are informed by Dr. P. Russel that in four thousand four hundred cases of infection he only met with twenty-eight of a well ascertained renewal of disease.†

Inoculation sufficiently efficacious; but cannot be relied on for a salutary result.

Of the efficacy of inoculation from the virus of a buboe there can be no question; and we have hence a sufficient proof of the specific character of the eruption; but it is not always a successful efficacy; and, even where it is so, as the extent of the immunity is not sufficiently ascertained, inoculation for the plague is by no means to be recommended.

Case in exemplification.

We are told by Mr. (now Sir John) Webb of a bold experimenter in the person of a young physician and hospital surgeon attached to the British army at Rosetta in 1802, who, to determine the question whether the bubonous virus of the plague be or be not a specific and propagable poison, inoculated himself at El-Hamed, on January 3d, twice by friction from the matter of a buboe, and once, on the ensuing day, by incision. He was attacked with rigor and other symptoms of fever on the evening of the 6th of the same month, which proved to be the plague, became delirious on the 8th; and continued in this state till the evening of the 9th, when he expired.‡

I gladly avail myself of this authentic narrative of the Director General of the Ordnance Medical Department, published since the first edition of the preceding pages was written, in confirmation of the general statement here offered; and as containing, if a feeling of high esteem and friendship have not unduly biassed my judgement, one of the most valuable documents we possess on the subject; particularly in respect to the best practical means of opposing the influence of this desolating scourge upon a large scale.

Plague in the British army of Egypt; from Sir J. Webb's narrative.

Sir John Webb's narrative embraces the history and progress of the plague as it appeared in the British army employed in the conquest of Egypt in the years 1801,

* Guthrie's Observations on the Plague, &c. in Edin. Med. Comment. Vol. VIII. p. 348.

† Treatise, &c. p. 190. ‡ Med. Trans. Vol. VI. Art. VIII.

1802, and 1803, during the whole of which time he was present, and actively engaged in arresting its course: and it justifies us in drawing the following conclusions. Firstly, that the disease is specifically contagious. Secondly, that the atmosphere of contagion is very limited; and, that hence, it is by no means difficult to avoid being infected. Thirdly, that the disease makes its attacks with very different degrees of malignity, at different seasons of the year, and on different constitutions. And, fourthly, that those who reside in a place in which the plague exists, and have been gradually inured to the influence of the pestilential miasm, are less disposed to be affected by it than those who are fresh to its poison; and, as in the case of the jail-fever, may carry about them, in their clothes, effluvium enough to infect those who come within its atmosphere, while they themselves remain in a state of health.

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The first position is sufficiently proved, not only by the test of inoculation just adverted to, but by numberless other facts; of which one of the most forcible is the following: A lieutenant of the 10th regiment of foot, residing in Alexandria, was attacked with the disease and conveyed within the boundary of the quarantine. A rent having been made in a musquito curtain, it was taken without his knowledge by John Lee, a private and servant to the lieutenant, who prevailed on the centinel to let him pass, in direct violation of orders, to another private of the same regiment of the name of William Bower, to be repaired; after which, Lee immediately carried it home, and, at his own request, accompanied his master into the pest-hospital, and attended him till he recovered. On the fourteenth day after this visit of Lee to Bower, the latter was taken ill with very suspicious symptoms, which, on the idea that it was an attack of plague, could be accounted for by no one till the application to repair the musquito curtain was recollected by the patient. The suspicions were confirmed on the next morning, and in the evening he died.

Specifically contagious.

So long, however, as the line of separation was faithfully

Atmosphere of

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maintained, and the sound and the diseased were thus kept distinct, there was scarcely an instance in which the disease broke out among the former. I say scarcely an instance, because an anomalous case or two occurred occasionally. But such was the judgement and the vigilance exerted from first to last, that the Board of Health were able to trace almost every instance of fever to the source from which it was derived, notwithstanding the difficulty of maintaining a rigid and permanent prohibition of all communication whatever. And hence it is most probable that the few exceptions to the general fact proceeded from a disobedience of orders which the Board were not able to detect.

contagion very limited.

Disease exhibits different degrees of malignity in different seasons of the year.

In general, Sir John Webb observes that the course of the disease is nearly the same every year, and equally varies in different seasons of the year. In Egypt it commences in November, at which time it rages with its most deadly malignity, "and those who are affected by it sink into the grave almost without complaint." It continues its ravages with little abatement through the winter and the earlier part of the spring, when, as the weather becomes warmer by the approach of summer, its attacks are less frequent, its symptoms much milder, and it subsides into a manageable malady; still, however, retaining the characteristic test of glandular affection: and on the 24th of June the Turkish government announces to the public its supposed cessation by a discharge of cannon; the atmospheric temperature being now acquired in which the matter of plague ceases to operate.

Whether the miasm be ever entirely destroyed.

Sir John, however, with great judgement entertains doubts of its entire cessation, even then or at any time; and brings a proof or two of its existence during the period of official emancipation. In few words he conceives the plague to exist in Egypt as the small-pox exists in England; only, from a greater regularity in the atmospheric changes of the country, evincing a greater regularity of epidemic flux and reflux, operated upon at the same time by contingencies often difficult to be developed: and hence equally varying in violence and extent.

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That the miasm of plague, like that of typhus, is sometimes inert upon those habituated to its influence, is obvious from the following fact. "When our Pest establishment at the camp was broken up, I discovered that the Arab servants, who had been employed in it had secreted a great part of the clothing of the men who had died of the plague; some of which they wore with great satisfaction and *perfect impunity*." I have noticed this effect of habit in the preceding view of the plague at Mogadore: and to the same cause Sir John Webb ascribes it that the Chasseurs Britanniques, on their first arrival at Alexandria from Trieste, suffered far more severely from the disease than the troops that had been stationed there for some months.*

Nearly inert upon those long exposed to its action.

Attack sometimes peculiarly slight.

How slightly the disease makes its assault upon some constitutions, may be inferred from the case of one of the sailors of the Major transport, who was attacked towards the end of March with an inguinal buboe, but was otherwise *in perfect health*. "The man," says the Director General, "declared he had had it three days, and attributed it to cold. I was, however, satisfied, after a careful inquiry into his state, and an examination of his leg and thigh of the same side, that it was an effect of pestilential contagion, but in its mildest form. He was, therefore, placed in a separate tent, and a gentle aperient was administered, which was all the medicines he required. On the 2d of April I found the swelling had begun to diminish, which it continued to do until it entirely disappeared."

Interesting case of a more fatal kind.

The following description is of a different character. It is written with a touching simplicity that does credit to the author's heart, and will not be read without feeling by the most torpid. "As I approached the beach to examine them (the sick and suspected of the Major transport,) the first object that presented itself was a young

* Compare Dr. Patrick Russel's Treatise on the Plague, B. I. Ch. IV. (Aleppo) p. 19. 4to. 1791.

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woman supported in a chair (Francisca Kennis,) moaning under oppressive disease. She stared wildly about, quite insensible to every object around her, and there was a muddy glistening in her eyes, which I had seen described, but had never before observed. Her husband stood over her in the deepest distress and held a lovely infant to her breast, who tranquilly sucked the poison that soon afterwards destroyed him. I feared at first that force would have been necessary to separate the father from his wife and child, but he at length yielded to entreaty, and was removed from the infection though too late to save his life. She was conveyed to the Pest Hospital, where she soon expired; and the child was confided to an Arab, who fed and watched over it with the greatest care. On the 28th of March, the fifteenth day after the separation took place, the infant was attacked with plague, and languished until the 14th of April, when death terminated his sufferings."*

Average of the loss sustained under the regulations adopted.

Upon an average, from a table of the general return of the loss sustained by the British army from the plague, during the conquest and evacuation of Egypt, from the 8th of March 1801 to the 8th of March 1803, comprising just two years, it appears that the whole number of sick was 660:—of whom 361 died, and 299 were discharged cured: making the deaths rather more than half the number attacked. And further, that of the above 660, 612 were seized between March 8th, 1801, and June 30th, 1802, being nearly sixteen months; and only 48 between July 1st, 1802, and March 8th, 1803, including the remainder of the time: a result which reflects a very high degree of credit on the means resorted to on the occasion, and on the vigilance and activity with which they were carried into execution: 361 being the entire loss sustained from this fatal scourge operating through a period of two years: whilst in the French army in the same quarter, as we learn from M. Desgenettes, not more

* Loc. citat. p. 148.

than one in three of those that suffered were fortunate enough to recover: and, according to Dr. L. Frank, not more than one in five.

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Such is the history of plague as it has shown itself in different ages and parts of the world, collected from the writings of unimpeachable eye-witnesses of its progress. In the midst of many discrepancies it exhibits a sufficient identity of character; and I have dwelt upon it the more largely, because, from the time of Dr. Cullen to the present day, its discrepancies have been chiefly attended to. And hence, while some writers of respectability have attempted to divest it of one, and others of another of its peculiar and most striking attributes, as that of contagion,* or that of atmospheric influence,† some, and especially Professor Frank,‡ have been equally inclined to sweep the whole away at once, and to reduce it to a mere modification of typhus or some other fever of great malignity :§ on which account, in Swediaur's Nosology, it is placed next to typhus in the class of continued fevers, instead of in that of exanthems; and is distinguished by the name of loimopyra.‖

Hence plague evinces discrepancies in all parts of the world: but still preserves an identity of character.

Swediaur's arrangement.

From its history then, let us endeavour to collect its pathology, or the laws by which it is governed, and which connect it with or separate it from other exanthems.

General pathology deducible from the above narratives.

In the first place, it is obvious that the plague, like many other febrile eruptions, is under the occasional influence of various concomitant circumstances that give a

Under the occasional influence of concomitants.

* Læssis, Recherches sur les véritables Causes des Maladies Epidemiques, &c. 8vo. Paris. 1819.—Lange, Rudimenta doctrinæ de peste.—Magirus, Von der Pest.—Maclean, Results of an Investigation respecting epidemic and pestilential diseases, including researches in the Levant concerning the plague.

† Sir Brooke Faulkener.—Tully, Hist of Plague in the Islands of Malta, Gozo, Corfu, &c. 8vo. 1821.

‡ J. P. Frank, De Cur. Morb. Hom. Epit. Tom. I. p. 136. 8vo. Mannh. 1792.

§ Dr. W. Heberden, Observations on the increase and decrease of different diseases, particularly the plague, 8vo. 1801.—Dr. Hancock, Researches into the laws and phænomena of pestilence, &c. 8vo. 1821. Dr. L. Frank, De Peste, Dysenteria, &c. 8vo. Vienn. 1822.

‖ Nov. Nos. Med. Syst. I. 23

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considerable diversity to many of its features. Its proper fever is an acute typhus; but even this, by the constitution of the individual, or the peculiar state of the atmosphere, sometimes changes to a remittent, and even to an inflammatory type. So the measles and small-pox, whose proper fever is a cauma, sometimes change, as we have already seen, into a typhus or synochus. The final end of the fever in plague, as in other exanthems, is to restore the body to health by throwing the morbid ferment to the surface in a specific way. And, as in other exanthems also, a very small degree of fever is requisite for this purpose. And hence we find that wherever the disease runs through its progress kindly, the fever is slight in degree and short in continuance; and the specific eruption shows itself in its perfect character. Dr. Frank the younger tells us of a patient who even danced, and was merry at the very time when he had a bubo forming in the right axilla.* In the small-pox we sometimes find scarcely any eruption, and very little disturbance of the system; and the same benign disposition is occasionally found to attend the plague; for the soldier who is struck while in the ranks with a sudden shock, or *m' drop*, as the Arabians call it, and is taken to the hospital on one day, has, in a few instances, by proper treatment, passed through the febrile assault in three or four hours and resumed his station the day after:† the disease in such cases evincing the same rapidity of attack and recovery which we have already noticed in that tremendous and fatal scourge, the spasmodic cholera of India, to which the plague bears a near resemblance in many respects.

Hence varied in the nature of its fever.

A small degree of fever only sufficient to perfect the specific eruption.

Exemplified.

Next, the proper eruption of plague is that of buboes; and where these alone arise, and in their proper period, the disease is not accompanied with much danger. They are always a favourable sign, and seem to afford the longest indemnity against future attacks. When the fever is more considerable, carbuncles, the jimmerat of the Arabians, are thrown out at the same

The proper and salutary eruption buboes.

Only accompanied by carbuncles when the fever is higher.

* De Peste, Dysenteria, &c. 8vo Vienn.

† Edin. Med. Com. Vol. III. p. 357.

time over different parts of the body; and there is in this case always great debility; which is probably the cause of their appearance, and a considerable degree of danger. And if the fever run still higher the danger will be proportionably increased, the proper eruption of buboes may perhaps be supprest, and carbuncles alone be found, highly malignant, and secreting a most acrid and corrosive ichor which burns as it oozes and spreads about, and occasionally forms extensive trails of painful and distressing sores.

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But the fever is often still more acute, and especially, for a reason we shall presently notice, when the disease earliest appears among a people; and the danger may be imminent from the first shock. The typhous symptoms are here of the most malignant nature: there is a sudden and almost utter exhaustion of sensorial power without the smallest means of recruit: all the larger viscera are disturbed in their functions, the head, the heart, the lungs, the stomach, and the liver; some overwhelmed with congestion, others sinking and powerless, as though the morbid virus were translated from the surface to themselves; the only active principle throughout the entire system being that of fever itself; which increases with the increase of the general mischief, and, like a house on fire, gathers fuel from the downfal of the fabric. All the symptoms of putrefaction make an early appearance, and appear at the same time under these circumstances; the animal spirits fail and are despondent; the respiration is anxious and feeble; the stomach faint and sinking, or the brain comatose; purple stigmata and vibices are scattered over the body; and the patient is destroyed by the incursion of the eruptive fever, as often happens in the smallpox, before the specific tokens have time to show themselves.

When very severe buboes superseded by symptoms of malignant typhus.

Of the primary source of plague we are in as much uncertainty as in respect to that of any other exanthem; it appears, however, to have a just claim to a higher antiquity than any of them: for we have already seen that it was known in an early era to the Greeks, and that his-

Primary source of plague uncertain: but of early date:

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tories of it, as it has shown itself in different ages and countries, have descended in a regular stream of Greek, Arabic, Roman, and neoteric writers down to our own day. We might, indeed, if it were necessary, ascend to a far remoter period, and prove its existence in the earliest ages of the Jewish history, for it is very frequently referred to in the Penteteuch under the name of DEBER (דבר*), and is more particularly described in the prophetic writings as DEBER MISRAIM (דבר מצרים or דבר מצרים†), the PLAGUE OF EGYPT, THE PLAGUE PROCEEDING FROM EGYPT; thus pointingly adverting to what was equally regarded as its indigenous soil by the Greeks‡ and Barbarians as well as by the Jews: while the carbuncular variety is also peculiarly distinguished and characterized by the name of Shechin perech (שחין פרה§) "BURNING CARBUNCLE," and Shechin Misraim (שחין מצרים‖) CARBUNCLE OF EGYPT. That, like other exanthems, it consists in and is propagable by a specific virus is unquestionable; for we have already seen that it has often been put to the test of inoculation; and, like most other exanthems also, it appears to be dependent for an extensive spread upon the same accessories as give rise to febrile miasm or contagion; and which, as before noticed, are for the most part the common auxiliaries of putrefaction.¶ Whether any combination of these be capable of originating it of themselves either without or within the human body, or whether it be only propagable by a stream of hereditary descent from primary matter communicated from place to place, is a problem to the present hour; though it is probable that the principle which in this respect governs most of the other exanthems, as measles, small-pox, and scarlet-fever, governs the miasm of plague also: for all of them, while derivable by communication with the affected, seem, at times, to have assumed the form of epidemics.

and known to the Jews from their captivity in Egypt.

Dependent for an epidemic spread upon the common auxiliaries of putrefaction.

Whether ever ingenerate doubtful.

Law of febrile miasm applicatory to exanthems,

In deducing the more obvious laws that regulate fe-

* Exod. v. 3. et alibi. † Amos iv. 10.

‡ See especially Lucr. VI. 1139, who quotes from Thucydides.

§ Exod. ix. 9. ‖ Deut. xxviii. 27. ¶ See Vol. II. p. 84.

brile miasm, I observed at some length that whenever originating from the human body itself, this miasm does not seem to be very volatile and is soon dissolved or decomposed in an atmosphere of pure air:* and we have since had occasion to apply the same remark to the specific miasms of all the preceding exanthems. I have now to observe that it applies especially to that of plague, whose sphere of infection in pure air appears to be more limited than that of any of the rest; on which account, indeed, it has been held by many who have practised in the field of this disease to be communicable by contact alone. Such, in truth, seems to be the surest way of communication, and may, in all common cases, be regarded as a way altogether irresistible: but it is not the only way. In the pure and healthy air of Malta, during the visitation of the plague in 1813, it was almost the only mode of transmission, and hence the readiness with which it was subdued by the rigid line of quarantine, which was so wisely proposed by the medical officers, and enforced by Sir Thomas Maitland. But several of the most intelligent residents on the spot, and even Mr. Tully himself, who in his work on this subject has held up contagion as the sole mean of propagation, have admitted to me in conversation that the disease might be received by the breath of the infected without contact, upon a very close intercourse. Sir B. Faulkner's opinion upon this point is in perfect union with Mr. Tully's: "It is communicated," says he, "only by contact *or* close association with the person or thing infected."† And in consequence they admit that the air, even in its purest state, may become a vehicle of communication, though to a very short distance, and probably for a very short period of time after being impregnated: since, as already observed, the miasm of plague dissolves in pure air with great rapidity.

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and particularly to plague:

on this account little sphere of infection limited in pure air;

When, however, the atmosphere is stagnant or already

but possessing a wide range in air loaded with other contaminations,

* Vol. II. p. 85.

† Minutes of Evidence before the Select Committee of the House of Commons.

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loaded with foul effluvia of any other kind, especially such as proceed from the filth of close or crowded rooms, or the putrescent decomposition of animal or vegetable substances, no modification of febrile miasm, as we have had reason to state antecedently, dissolves readily; and consequently the seeds of such disease may continue floating for a considerable period of time, and be driven by currents to some distance in full possession of their specific mischief; and hence, even a sporadic fever may be converted into an epidemic.

and hence at times epidemic.

It is in this way that plague appears in many cases to have extended itself; for it would be unjust to the character and good sense of a cloud of intelligent witnesses to deny that this disease sometimes also assumes the form of an epidemy. But I believe it will be found an universal fact, that it has never exhibited itself in this form except when aided by the above auxiliaries. Thus much is certain, that it has always raged with most violence and to the greatest extent in cities and districts where the atmosphere has been least pure, the human frame most debilitated, and the tendencies to putrefaction strongest and most multiplied, as in times of famine or any other general distress, and in the close and squalid quarters of the poor of every city into which it has found an entrance, if it have not even originated there.

This fact, indeed, is so common, that while many writers have contended that plague can only be propagated by actual contact, others, of equal authority, have maintained that the disease is altogether an epidemic, as directly dependent upon the state and constitution of the air as any epidemic whatever; and that to attempt to cure it by a mere interdict of communication between individual and individual is equally weak and wicked. The view now taken of the disease is calculated to reconcile these conflicting opinions, and to bring into a state of amity the most sturdy adversaries in the contest. In enforcing the line of quarantine at Malta,* Sir Brooke

* Treatise on the Plague, by Sir Arthur Brooke Faulkner, M.D. 8vo. 1820.

Faulkner most wisely took especial care to enforce at the same time a rigid attention to purification of every kind, and I shrewdly suspect that, without the latter, his cordon would have been but of little avail.

Hence plague is regulated by the general laws of other exanthems:

Thus far the ordinary course of plague does not essentially vary from that of most of the exanthems we have already considered. The general laws of any one are those of the whole: they are all deflected, and exhibit some variety of features by particular circumstances; but each, to an attentive eye, gives sufficient proofs of identity in the midst of every modification, and is specifically distinguished from the rest.

but evinces some peculiar properties.

There are two or three properties, however, which, if not peculiar to the plague, are indented upon it far more strikingly than upon any other disease of the same order, or perhaps of any order whatever: and we will next proceed to a brief examination of them.

More rapidly communicable by the pores of the skin,

The ordinary mode of infection, on exposure to an exanthematous patient, is by inhalation or deglutition; probably by the former; for variolous contagion has been swallowed in the way of experiment without producing any influence. How far any other virus besides that of the plague is receivable by the pores of a sound skin is to this hour a matter of doubt. In the case of plague, however, there ought not to exist the shadow of a doubt; for, though the miasm is probably communicable within the sphere of its activity, by the mouth or nostrils, direct contact or absorption by the skin forms the ordinary means of its conveyance. Upon this point, almost all the writers of authority, who have been professionally engaged in opposing its progress, are concurrent. And hence, again, whatever obstructs or corrugates the mouths of the cutaneous absorbents becomes a certain anti-loimic. Oil seems to do this most effectually; it was accounted "the sovereignst thing on earth" in the last pestilent ravage at Noya, where the physicians, inspectors, and commissaries uniformly wore oil-skin caps, mantles, masks, and gloves.* At Malta, it was in equal favour: and Mr.

and hence often incommunicable where this channel is obstructed.

Hence the apparent benefit of oil applied to the skin.

* Giornale di tutti, Atti, Discussioni e Determinazione della Sopra-intendenza Generale, &c. Napoli, 1816.

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Exemplified.

Tully has informed me that there was no instance of an attendant on the infected having received the contagion so long as he was regular in thoroughly illining himself with oil, wearing a dress soaked in oil, or a covering of oil-skin. And to the same effect is the evidence of Sir Brooke Faulkner, physician to the forces at Malta in 1813, before the Select Committee of the House of Commons, June 14, 1819, who, in answer to the question "How were the military attendants preserved?" replied, "With respect to the Pest-hospital in which I attended, they were, in my opinion, preserved by wearing a dress of oiled silk, which prevented the possibility of any contact of infected matter with the skin, and probably, also, by its promoting free and copious perspiration, and, in consequence, preventing absorption."*

To the same effect it has been asserted by Mr. Baldwin of Cairo that, among upwards of a million of inhabitants carried off by the plague in Upper and Lower Egypt during the space of four years, not a single dealer in oil, so far as he could learn, had fallen a sacrifice to it."† A similar remark is made by Mr. Jackson respecting the crolies or labourers in oil-warehouses during the Barbary plague just referred to. In that of London in 1665, it is specially observed by Baynard, and most of the writers, that the trades chiefly exempted were those of oilmen, fishmongers, tanners, bargemen, and watermen: the first three evidently protected by the greasy vascidity that covered the hands and dress generally; and the last two by living separate from the scene of contamination, as though cut off by a quarantine. While, on the contrary, it has been quite as generally remarked that the descriptions of persons most exposed to infection are bakers, cooks, and smiths, the pores of whose skin are kept in a state of perpetual irritation and relaxation from their respective employments.

How far an habitual exposure to the miasms of other exanthems torpefies the skin to their action, or whatever

* Copy of Minutes, &c. As also Sir A. B. Faulkner's Treatise on the Plague, &c. Appendix, p. 16, 8vo. 1820.

† Travels, &c. Chap. XVII.

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other organ affords them an inlet; or how far the system at large may be thus torpefied, has not been determined with any degree of satisfaction. That stimulants of most kinds have a tendency to produce such torpitude and irritability is unquestionable; and that the miasm of gaol-fever has occasionally done it, will not soon be forgotten in the courts of judicature of our own country. It is hence probable that the effluvium of exanthems, in general, is possessed of a like power. But in the case of plague, the fact seems to be unequivocally and most strikingly established; for we find in every country, after it has raged for a certain number of weeks or months, that the disease is both caught more sparingly, and exercises far less violence, at least upon those that have been exposed to its aura; for upon new comers or strangers it still retains its virulence. The history of almost every plague may be taken in confirmation of this remark; but it is particularly established by numerous facts already quoted from Sir John Webb and Mr. Jackson. It is highly probable that if the corps of troops which, after the mortality had subsided at Mogadore, arrived there from the city of Terodant in the province of Suse, *where the plague had been raging* and had subsided, had remained at Terodant, it would have continued to escape. But it lost its immunity by an exchange of contaminated for pure air in the course of its journey, and the organs, having acquired their wonted irritability and susceptibility, were as open to infection as those of fresh persons.

Prolonged exposure to the miasm of plague torpefies the irritability of the absorbents to its actionmore than in other exanthems.

The acquisition, then, of a growing torpitude to the action of the pestilential effluvium beneath a habit of exposure to its influence, seems unquestionable; and puts us in possession of one mean of the progressive subsidence of this tremendous scourge, after having occupied a town or district for a certain period of time.

But there is an additional cause of its cessation, which is equally striking, and forms another of the peculiar features of this complaint. As a particular state of the atmosphere, such, for instance, as its being saturated with foreign corpuscles from decomposing animal filth, renders

As rendered more active by a peculiar state of the atmosphere, rendered equally inert by some other state.

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it a bad solvent of pestilential miasm, and consequently a ready vehicle for the spread of the disease, a particular state of the atmosphere of some other kind seems to possess a power of dissolving the effluvium instantaneously, in many cases, and of diluting or disarming its virulence in others. Of the immediate nature of this atmospheric change we are in a considerable degree of ignorance, but of the general fact there is not a quarter of the world that does not furnish us with examples: so that all of a sudden the scourge that has hitherto been sweeping off one or two thousand inhabitants of a city every day either totally vanishes, or drops its mortality, and only continues in a form so mild as to excite no alarm. Dr. Hodges notices this sudden change very particularly in the plague of London. "In the beginning of November," says he, "people grew more healthy, and many came into the city without fear; so that in December they crowded back as thick as they fled: and such confidence was now inspired that many went into the beds, where persons had died, before they were cold, or cleansed from the stench of the diseased; *for the nature of the disorder was changed.** "Even the physicians themselves," says another eye-witness of the same pestilence, "were surprized: wherever they visited they found their patients better. Either they had sweated kindly, or the tumours were broken, or the carbuncles went down, and the inflammation round them changed colour, or the fever was gone, or the violent head-ache assuaged, or some good symptom was in the case: so that in a few days whole families that expected death every hour were revived and healed, and none died at all out of them."†

The nature of this peculiar state unknown. Exemplified.

Alpinus speaks in the same manner of the sudden decline of mortality in the plague of Egypt: "In the month of June," says he, "to whatever degree pestilence may be raging in Egypt, as soon as the sun enters Cancer it ceases entirely." And Dr. Russell confirms this remark as follows:—"It is agreed on all hands that about the

* Loimol. p. 27. † Journal by H. F. p. 250.

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24th of June, at Cairo, there is a remarkable sudden alteration in the contagious property of the plague, as well as in the malignity of the disease itself, to whatever cause it is to be ascribed; and Alpinus's remark, that at the same time it ceases, the furniture in infected houses suddenly loses all power of communicating the disease to the inhabitants, so that health and tranquillity are at once restored, agrees in some measure with the general experience of other places in Turkey, where it is well known houses or goods undergo little or no purification."* Mr. Bruce speaks to the same effect: "The Turks and Moors, immediately after this day, expose in the market-places the clothes of the many thousands that have died of the plague during its late continuance; and though these consist of fur, cotton, silk, and woollen-cloths, which are stuffs the most retentive of the infection, no accident happens to those who wear them, from their happy confidence." And we are hence able to enter more fully into the meaning of a passage already quoted from Sir John Webb, in which he tells us that on the approach of summer the plague subsides into a manageable malady, and that on the 24th of June the Turkish government announces to the public its supposed cessation by a discharge of cannon.

Hence influenced in its rise, progress and decline, by the state of the atmosphere; but essentially dependent upon specific miasm.

Unless, therefore, we withhold, most unjustly, all belief in this accumulation of unimpeachable evidence, it seems impossible not to admit that the state, or, to speak more definitely, the temperature, of the atmosphere is connected with the decline of the plague, and consequently with its previous progress; and that, as already observed, it cannot maintain its energy, nor perhaps exist under an atmospheric heat of 60°, nor above that of 80°; while its dependence upon a specific miasm seems equally clear from its occasionally commencing in the healthiest, as well as in unhealthy seasons; though most frequently, and most fatally, in the latter. In the plague of London, as we have already seen, the disease followed upon a malignant epidemy; in that of Athens, the preceding year had been so peculiarly

* On the Plague, B. III. Ch. v.

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healthy that mankind seemed to have acquired an exemption from complaints of every kind. In that of Egypt, it makes a regular return whatever be the constitution of the season. Dr. L. Frank, in one place, ascribes the diminution of the fatal power of the plague to a periodical return of the north wind: but he afterwards observes that winds, at times, or even moisture, seem to have little influence upon it. That the change in its degree of activity is connected with the change which takes place in the temperature of the atmosphere is unquestionable; and it is highly probable that it is dependent upon this alone. That below 60°, or in the cold of the winter months, the miasmic corpuscles lose their volatility, and gradually become decomposed; while above 80°, as in the summer months of Egypt and Arabia, they become almost immediately dissolved, so that clothes and bedding, however loaded with them, are rendered harmless. And hence the reason why it has never been known either in the tropical or arctic regions.

In entering upon the medical treatment of plague, I regret that I am not able to give the judicious plan, in conjunction with its results, that was adopted for the British army in Egypt. The care of the Pest Hospitals did not fall within the range of Sir John Webb's department, but I availed myself of his friendship to solicit information upon this subject from his colleague Dr. Buchan, who, I have reason to believe, had made a journal of very valuable notes in relation to it. The public will hear, with regret, that this information is incommunicable from the destruction of a great part of these minutes, which followed the fate of Dr. Buchan's clothes and bedding at the time of his quitting the hospitals.

Medical treatment. Venesection whether advisable.

Respecting the proper plan to be pursued, there is still some controversy. Early, copious, and even repeated venesection was at one time, and by very high authorities, recommended in this disease, and especially by Sydenham at the commencement of the plague of London in 1665 and 1666, before the appearance of any eruption. Like Dr. Rush, in North America, respecting the yellow fever,

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he was stimulated by the bold determination of quelling this formidable enemy in its very onset, and before it should have made a fatal breach in the constitution. This practice, however, has been far less successful, and therefore less persevered in, with regard to the plague, than with regard to the yellow remittent. Dr. Mergens says, he would never advise its being resorted to: and even Sydenham hesitated as he became more experienced. "But though," says he, "I approve and have often experienced the utility of bleeding, yet for several reasons I prefer the dissipation of the pestilential ferment by sweat, because sweating does not in the same degree prostrate the patient's strength."* Blood-letting and purgatives Dr. L. Frank assures us prove equally hurtful in the plague of Egypt. During the plague at Noya the doctrines of Dr. Brown were in high vogue, and the disease was divided into sthenic and asthenic; free bleeding and large doses of calomel were prescribed for the former, and acids, opium, ether, and other stimulants for the latter. But in general the medical practice was here as confused and inconsistent as the precautionary means of the police were excellent and effective, so that Romani was right in affirming that, after all, their real alexipharmic was to be found in God alone.† Wherever there is great and threatening congestion in a large or vital organ, bleeding, and bleeding freely, should certainly be employed, for this symptom alone would lead to a fatal issue. It is hence, in such cases, wisely recommended by the elder Frank.‡ But the practice must form an exception to the general rule, and not the rule itself.

Application of external cold.

The use of external cold by the application of sheets of pounded ice to the body generally, has been also tried, but with no satisfactory result. It has, indeed, been chiefly confined to Russia, under the vigilant eye of M. Samoilowitz. How far it might succeed in warmer cli-

* Loco citato.

† Ricordi sulla Peste, redatti in un Sistema Teorico-practico da F. Romani, dottore in Filosofia e in Medicina. Napoli 1816.

‡ De Cur. Hom. Morb. Epit. Tom. I. p. 136.

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mates is uncertain, but ablution with cold water offers a fairer promise. A brisk emetic, given at the commencement of the attack, has often proved of the utmost advantage. M. Degio, to whom I have already adverted, affirms that he has seen men, suddenly cut down by the disease when on duty, as though shot by a musket-ball, so completely recovered by an emetic given instantly, as to be on duty again within twenty-four hours afterwards.* If the nausea and bitter taste in the mouth be not removed by a first emetic, a second, and even a third is often prescribed; and, where the symptoms are urgent, at a distance of not more than four or five hours from each other. And this plan is found to produce far less exhaustion than that of purging which the patient is often unable to support.

Treatment.

Great use of emetics.

Warm sudorifics.

After evacuating the stomach, and hereby exciting a determination towards the skin, the cutaneous action is to be maintained by active and cordial sudorifics, which, indeed, constitute the ordinary plan of the present day. For cordials, there is the utmost necessity: the debility is, from the first, extreme and threatening, and the vascular action must be supported at all adventures. Even Sydenham, who at one time hesitated as to the use of them upon theory, in which he did not often indulge, was obliged to admit their beneficial effects, though he regarded the practice as hazardous. With respect to sudorifics, the concurrent voice of all physicians in all countries is in their favour. Diaphoresis is, indeed, the evacuation that relieves most certainly and most effectually; and it should be maintained by warm, diluent, and supporting drinks. James's powder employed without cordials does not appear adviseable. It was very largely administered at Moscow, but, according to Dr. Mergens, with no particular advantage. In many cases the warmer opiates, as the opiate confection, have been found serviceable, assisted with camphor and ammonia, and blisters repeated in succession.

Perspiration the naturalmeans of relief: but excited by antimonials alone exhausts, and is rarely useful. Warm opiates, camphor, and ammonia.

* Substance of notes taken at the Russian army during the prevalence of the Plague. See Edin. Med. Com. Vol. VIII. p. 352.

GEN. IV. SPEC. I. Anthracia Pestis. Plague. Treatment.

As oils of all kinds applied to the surface of the body have been found a good preservative against the absorption of the contagious miasm, it has been also had recourse to, and employed in the same manner as an antidote when the disease is present, and particularly in the East where the zeit jagghy, or olive oil, has been regarded almost as a specific. Mr. Baldwin affirms that he made use of it in this form very extensively at Cairo, and with great success: and it is usually employed in Barbary and at Constantinople. The French physicians, however, do not seem to have relied much upon its virtue. M. Sotira suggests that Mr. Baldwin's benevolence in the distribution of oil for this purpose was occasionally abused, and the cures by oil exaggerated and multiplied by those who wished to have oil gratis. M. Assilini, however, inclines to a belief that it may be useful: it is most pointedly recommended by father Louis of Padua, director of the hospitals at Smyrna: and quite as strongly by Dr. Pauvini of Palermo, who had practised indeed at Malta, but whose work was reprinted during the plague at Noya, and gave a character to the medical practice pursued in that city.* The application should be accompanied with a long-continued friction; and, when successful, is followed in about half an hour by a perspiration profuse and general, and which affords immediate relief. It is not difficult to reason upon the subject: the oil probably obstructs the pores of the skin, and prevents the escape of caloric, which, aided by the friction, accumulates on the surface, and shortens, or altogether prevents, the shivering fits, which are otherwise very severe. Sir Brooke Faulkner admits its sudorific power, but is by no means friendly to its use; believing that even by this very power it has often proved highly injurious. Yet he does not speak from much personal acquaintance with its effects; but tells us that "a gentleman who superintended the health of one of the districts

How far oil may be regarded as an antidote.

Its probable action.

* Chiara di Mostrazione de veri Preservativi della Peste e de remedj, &c. del sacerdote P. Pauvini, dottore in Medicina, &c. Palermo. 1813.

GEN. IV. SPEC. I. Anthracia Pestis. Plague. Treatment.

of Valetta, assured *him* that although he had constant opportunities of seeing oil frictions used by those under his immediate orders, he was satisfied that it was not merely useless *as a defence*, but hurtful to the general health, by the debility which succeeded to the profuse perspirations which it occasioned." Sir Brooke, in the passage of his work now referred to, estimates its prophylactic virtue as low as its remedial,* and is thus far in a state of direct antagonism, not only with Mr. Tully, who was afterwards Inspector of quarantine on the same station, but with himself at the time of delivering his evidence before the Select Committee of the House of Commons; an extract from which we have already quoted. Dr. L. Frank employed oil according to his own statement with great and decided success. In his hands it proved a most salutary sudorific; and to sudorifics he principally trusted. He used it in the form of friction, six ounces at a time, and a single friction a-day.

During remissions, bark and port wine.

In the remissions of the fever, the bark is used in great abundance, commonly intermixed with port or other generous wines. During the fatal plague which depopulated the whole of western Barbary in 1799, the Emperor Sidi Soliman is said to have had the disease twice, and in both cases to have derived his cure from a free use of the bark: in consequence of which, he was never afterwards without a large supply of it. When buboes or carbuncles appear, they are always to be promoted and matured by warm cataplasms.

Preventives.

Camphor, smoking tobacco, fumigation with gum sandrac, and the vinegar of the Four Thieves, are still largely employed as preventives. But the contagion, as we have already observed, is not peculiarly active, and the best prophylactics are cleanliness, pure air, freedom from actual contact, a liberal diet, and cheerful spirits. I may add that vaccination has been repeatedly tried; but has answered no good purpose. Sir Brooke Faulkner, indeed, gives a striking example of its failure, for

* Treatise on the Plague, &c. pp. 231, 232.

"in a numerous family," says he, "who had been recently vaccinated, the whole fell sacrifices to the prevailing contagion, with the exception of the parents who had never undergone the operation."* GEN. IV. SPEC. I. Anthracia. Pestis. Plague. Treatment

SPECIES II.

ANTHRACIA RUBULA.

Yaws.

TUMOURS NUMEROUS AND SUCCESSIVE; GRADUALLY INCREASING FROM SPECKS TO THE SIZE OF A RASPBERRY: ONE AT LENGTH GROWING LARGER THAN THE REST; CORE A FUNGOUS EXCRESCENCE; FEVER SLIGHT: OCCURRING ONLY ONCE DURING LIFE: CONTAGIOUS.

THE term RUBULA, by which this disease is distinguished in the present work, is derived from the Latin *rubus*, "a black-berry or rasp-berry," in French *framboise*, whence the common but barbarous name of *frambœsia*, quite as objectionable as that of *scarlatina;* and which the author has thus attempted to exchange for an euphonous and strictly classical term, in perfect concordance with the ordinary law of diminutives, which seems to prevail through the general nomenclature of exanthematous diseases, as rubeola, variola, varicella. Perhaps morula, from morus, a mulberry, a diminutive used in an approximating sense by Plautus, might have been somewhat more appropriate, since the eruption seems to bear a nearer resemblance to small mulberries than to rasp-berries. But as this last plant has laid a foundation for the vernacular name both on the African and American coast, GEN. IV. SPEC. II. Origin of the specific name. Why called frambœsia. Meaning of the terms yaw and epian.

* Treatise on the Plague, p. 233.

GEN. IV. SPEC. II. Anthracia. Rubula. Yaws.

on the former of which it is called *yaw*, and on the latter *pian* or *epian*, both importing rasp-berry; and as the earliest writers have, upon this authority, denominated it *framboise* or *frambœsia*, I have not felt myself at liberty to deviate from the original idea. Swediaur has denominated it *thymiosis*, but with less attention to the external character of the eruption. He arranges it, indeed, under the division of cachectic ulcers, and has made it synonymous with the synochus of the Greeks, as described by Celsus;* to which it has only a few casual resemblances, while in its essential signs it is widely different.†

Thymiosis of Swediaur.

The disease, as it occurs in Africa and America, exhibits some diversity, and lays a foundation for two varieties as follow:

α Guineensis. African Yaws.	Attacking infants and young persons chiefly; and subsiding as soon as the eruption appears.
β Americana. American Yaws.	Depacent; and destroying progressively both muscles and bones.

In the precursory remarks to the present genus, I have stated the reasons for introducing this species into the list of exanthems, or febrile eruptions; and the history of the disease will still further show that it could not with propriety have been placed under any other division. It is singular that we have no decided account of this malady among the early writers; nor, indeed, any account whatever till after the appearance of syphilis; whence, as several of its symptoms, and especially where the bones become affected, bear a resemblance to those of syphilis, yaws have been supposed by some writers to be a species of lues, and especially of that which in Scotland is denominated sibbens or sivens, of which we shall treat in the ensuing order: but the eruptive fever and consequent efflorescence, the indemnity from a second attack, as well as other symptoms, draw a sufficient line of distinction.

No account of the disease in the early writers.

Supposed by some to be a modification of syphilis: but distinguishable by diacritical marks.

* Lib. VI. Cap. iii. † Nov. Nosol. Meth. Syst. Vol. II. p. 180.

GEN. IV. SPEC. II. α A. Rubula Guineensis. African yaws. The mildest and probably the original form of the disease.

The FIRST VARIETY will often run through its course favourably without any medical assistance whatever; and is, indeed, often injured by it when incautiously and injudiciously interposed. This seems to be the primitive form, and that under which it chiefly shows itself in Guinea, and some other parts of Africa, where, as just observed, it is vernacularly called YAW or MORBUS RUBULUS.

Diagnosis.

It commences, like the other exanthems, with the ordinary symptoms of fever, although they are usually more tardy in their progress. Hence the precursory symptoms are languor, debility, head-ache, loss of appetite, rigor, and pain in the back and loins, which continue for a few days, with evening exacerbations. To these succeeds the specific eruption; consisting of successive crops of papulæ, at first not larger than a pin's head, but increasing in size with every series till they acquire the magnitude of a raspberry or mulberry. The smaller papulæ become real pustules, and discharge an opake whitish fluid when broken, and concrete into dense scabs or crusts. The larger are fungous excrescences, and, in their granular surface, as well as in their size and colour, bear a near resemblance to the fruit from which they derive their name. These sprouting tumours have but little sensibility, and suppurate very imperfectly; discharging rather a sordid ichor than a matured pus. They originate in scattered groups over different parts of the body, but are chiefly found, like the eruption of plague, in the groins, parotid glands, axillæ, and about the arms and pudenda: though they often disfigure the neck and face. The colouring matter of the hair, wherever they are seated, is obstructed in its secretion, and, as in old age, the hairs themselves, from a brown or a black, become a dead white. Dr. Thomas, who has given a very accurate account of this variety, apparently from personal knowledge, observes that, "In general the number and size of the pustules are proportioned to the degree of eruptive fever. When the febrile symptoms are slight, there are few pustules;

GEN. IV. SPEC. II. α A. Rubula Guineensis. African yaws.

but they are mostly of a larger size than when the complaint is more violent and extensive."*

Duration of the eruption variable.

The duration of the eruption is uncertain, and seems to depend considerably upon the state of the habit, and its power of promoting their maturity. They sometimes acquire full perfection in four or five weeks, and sometimes demand two or three months. In their progress to this state, there is usually some one that appears larger and more prominent than the rest, and is called the master-yaw. It is, in truth, a broader and more sloughy fungus, and discharges a larger portion of erosive sanies, which, if not washed off as it issues, will spread widely, and sometimes work its way to an adjoining bone, and render it carious. When the tumours point from the soles of the feet, they cannot press through the thickness of the skin, and hence acquire form imperfectly, and produce highly elevated calluses, which are called tubba or crab-yaws: and often very much impede the power of walking. As soon as the eruption has attained its height, the tumours when the disease proceeds favourably, become covered with crusts or scabs, which fall off daily in whitish scales; and, in the course of a fortnight, the skin is left smooth and clean; the master-yaw alone remaining and demanding attention.

Master-yaw.

Tubba, or callosities in the soles of the feet.

Treatment.

In attempting the cure of this disease, the first step should consist in separating the patient from his associates, to whom he will otherwise assuredly communicate it by contagion. He should then take freely of decoction of sarsaparilla or some other warm diluent, for the purpose of attenuating the specific virus in the blood, and quickening its passage towards the surface. And it is highly probable that the warm aperient bolus, composed chiefly of a scruple of sublimed sulphur and five grains of calomel, as recommended by the anonymous writer of a very excellent treatise upon the subject in the Edinburgh Medical Essays,† may be found serviceable, continued every

* Pract. of Phys. p. 643. Ed. 1819. † Vol. v. Part II. Art. LXXVI.

night. The master-yaw must be attacked with escarotics for it is to be destroyed in no other way. The callous tumours on the soles of the feet, should be softened by warm-water, or cataplasms of some gentle stimulant; and, when on the point of breaking, are best subdued by a slight application of the actual cautery, which proves the most advisable escarotic. The diet should be nutritious and liberal, so as to support the strength during the progress of the disease. And under this mode of treatment it is rarely that a patient fails to do well.

GEN. IV. SPEC. II. α A. Rubula Guineensis. African yaws. Treatment.

Mercury was at one time given in great abundance from the commencement of the complaint, under an idea that it would prove as beneficial as in the case of lues. But it is now sufficiently known to be productive of great mischief, and particularly when carried, as it used to be, to a state of salivation. It retards the cure, and generally aggravates the symptoms. It is often given in small doses as an alterative, when the disease is on the decline, and perhaps with advantage; but it ought never to be employed in any other form.

Mercury injurious at first, though useful as an alterative on the decline of the disease.

When the excrescences discharge a sordid ichor, they may also be stimulated with the nitric-oxyde mercurial ointment: but the natives themselves, who rigidly abstain, also, from the internal use of mercury, employ, instead of this, a liniment of the rust or sub-carbonate of iron and lemon-juice, which proves a very useful application; though probably a solution of sulphate of zinc might answer better. And during the maturation of the eruption they excite a profuse sweat by what may be called a warm air bath, which consists in putting the patient into a cask with a fire at the bottom in a brazier or small fire-pan; the top being covered over with a blanket. Under this mode of treatment a cure is said to be often effected in three weeks, and the funguses thoroughly healed.*

Practice of the natives.

The SECOND, or AMERICAN VARIETY, is a far more terrible complaint; or rather is the same complaint in an exasperated and chronic form; and hence, though incomparably

β A. Rubula Americana. American yaws.

* Edin. Med. Com. Vol. II. p. 90.

GEN. IV. SPEC. II. β A. Rubula Americana. American yaws.

slower in its progress than the plague, is accompanied with a carbuncular eruption quite as mischievous and disgusting, and more certainly fatal in its issue. It was first distinctly described by M. Virgile of Montpellier, who had practised with great reputation at St. Domingo. There can be little doubt of its being imported into the West Indies along with the slaves from the African coast; and is here called, as already observed, pian or epian, precisely synonymous with the African term yaw: the master-fungus being named mama-pian, or mother-yaw, as supposed to be the source or supply of the rest. The fungous berries in this form, precisely correspond to the carbuncle already described under the trivial name of *terminthus*, which consists of a "core of fungus spreading in the shape, and assuming the figure, and blackish-green colour of the fruit or berry of the pine-nut, or terminthus of the Greeks."* And it has hence been conjectured, but without sufficient foundation, that the disease of yaws is referred to by Galen and Dioscorides under this name.

Evincing a most exasperated and chronic form.

Probably imported from Africa by the slave trade.

Mama-pian or mother yaw, what.

Description,

The erosive secretion from the carbuncles of this variety generally, but especially from the mother-yaw, spreads widely, and, in its meandering, destroys all the surrounding parts, not excepting the bones. Nothing can exceed the revolting scene of a yaw-house, or hospital for the reception of slaves suffering under this disease in the West Indies. "Here," says Dr. Pinckard, "I saw some of the most striking pictures of human misery that ever met my eyes. Not to commiserate their sufferings is impossible, but their offensive and wretched appearance creates a sense of horror on beholding them. Of all the unsightly diseases which the human body is heir to, this is perhaps the worst. Some of these diseased and truly pitiable objects were crouching upon their haunches round a smoky fire; some stood trembling on their ulcerated limbs; others, supporting themselves by a large stick, were dragging their wretched bodies from place to place; while many

and pitiable progress.

* Cl. III. Ord. II. Vol. III. p. 340.

too feeble to rise, lay shivering with pain and torture upon the bare boards of a wooden platform."* Dr. Pinckard adds that "unhappily this most odious distemper has not hitherto been found within the power of medicine: that it often exists for years, and even where it sooner yields, its removal is more the effect of time and regimen, than of medical treatment.

GEN. IV. SPEC. II. β A. Rubula Americana. American yaws.

This view of the case is too generally true: but from the length of time which, under the best treatment, is required to effect a cure, it seldom happens that these miserable wretches receive all the attention which their situation deserves; and they are rarely sufficiently heedful of personal cleanliness, which, even alone, is of the utmost importance. This, with a generous diet to support the strength, pure air, regular hours of rest, and such exercise as can be used without fatigue, with warm balsamic applications to the sores, have not unfrequently succeeded where the bones have not become extensively carious. But the latter stages of the disease are horrible when it proves fatal; for the pains are excruciating, the debility extreme, and the bones are covered over with a quagmire of foul exostoses and corrupt ulcerations.

Yet not incapable of alleviation or even cure by proper attention.

It is happy for the European inhabitants of the West Indies that they are less liable to this miserable malady than their slaves: probably from using a better diet and being more attentive to cleanliness.

Whites less subject to it than blacks.

* Notes on the West Indies, Vol. II. Letter XXII.

CLASS III.

HÆMATICA.

ORDER IV.

DYSTHETICA.

Cacheries.

MORBID STATE OF THE BLOOD OR BLOOD-VESSELS; ALONE, OR CONNECTED WITH A MORBID STATE OF THE FLUIDS, PRODUCING A DISEASED HABIT.

CLASS III. ORDER IV. Range and explanation of the order.

THE words ordinarily used to import the diseases meant to be comprehended under the present order are CACHEXIA and IMPETIGO, or, as the Greeks expressed it, λυης, LUES, or LYES. None of these, however, exactly answer; and that on two accounts; first, because the order is limited to those depravities which seem to originate or manifest themselves chiefly in vessels or fluids of the sanguineous function; and, secondly because no very definite sense has hitherto been assigned to either of these terms; and they have, in consequence, been used in very different meanings by different writers, from the time of Celsus to our own day.

Class III. Order IV. Dysthetica. Cachexies. Import of the ordinal term.

Upon this subject the author has dwelt at large in his volume of Nosology, and it is not necessary to add to the remarks there offered. The word DYSTHETICA has hence been adopted for the purpose of avoiding confusion, and is justified by the EUSTHESIA and EUSTHETICA (ΕΥΣΘΕΣΙΑ and ΕΥΣΘΕΤΙΚΑ) of Hippocrates and Galen, importing a "well-conditioned habit of body," as their opposite DYSTHETICA, from the same root, imports "an ill-conditioned habit," but a habit, as just observed, originating in or dependent upon the organized parts or fluids of the sanguineous function. Thus explained, it will be found to embrace the following genera:

I. PLETHORA.	PLETHORA.
II. HÆMORRHAGIA.	HEMORRHAGE.
III. MARASMUS.	EMACIATION.
IV. MELANOSIS.	MELANOSE.
V. STRUMA.	SCROPHULA. KING'S EVIL.
VI. CARCINUS.	CANCER.
VII. LUES.	VENEREAL DISEASE.
VIII. ELEPHANTIASIS.	ELEPHANT-SKIN.
IX. CATACAUSIS.	SPONTANEOUS IGNESCENCE.
X. PORPHYRA.	SCURVY.
XI. EXANGIA.	VASCULAR DIVARICATION.
XII. GANGRÆNA.	GANGRENE.
XIII. ULCUS.	ULCER.

GENUS I.

PLETHORA.

Plethora.

COMPLEXION FLORID; VEINS DISTENDED; UNDUE SENSE OF HEAT AND FULNESS; OPPRESSION OF THE HEAD, CHEST, OR OTHER INTERNAL ORGANS.

GEN. I. Plethora hitherto generally neglected by nosologists.

PLETHORA is seldom ranked as a disease, and hence seldom treated of in a course of medical instruction. From what cause this omission proceeds I know not, nor is it worth while to inquire. That it is an important omission will be obvious to every student before he has been six months in practice; for there will probably be few affections on which he will be sooner or more frequently consulted. Yet the subject has not always been neglected by nosologists, for plethora, as a genus, occurs in the classifications both of Linnéus and Sagar.

General pathology.

In a state of health, the quantity of blood produced from the substances that constitute our common diet bears an exact proportion to the quantity demanded by the vascular system in its ordinary diameter, and the various secretions which are perpetually taking place in every part of the body. But the quantity of blood produced within a given period of time may vary; and the diameter of the blood-vessels, or the call of the different secernent organs may vary; yet, so long as a due balance is maintained, and the proportion of new-formed blood is answerable to the demand, the general health continues perfect or is little interfered with. Thus, a man exhausted and worn down by shipwreck, or by having lost his way in a desert, or who is just recovering from a fever, will devour double the food, and elaborate double the

quantity of chyle, in the course of four and twenty hours, to what he would have done in the ordinary wear of life; but the whole system demands this double exertion; the double supply is made use of, and the general harmony of the frame is as accurately maintained, as at any former period; there is no accumulation or plethora. GEN. I. Plethora. Plethora. Example of an instinctive or remedial power of nature.

It should also be observed that in this case the same remedial or instinctive power that stimulates the sanguific organs to the formation of a larger proportion of blood, stimulates also the blood-vessels to a diminution of their ordinary capacity; and lessens the activity of the secernents; and hence the difficulty to which the animal machine is reduced, is also met another way; and a balance between the contained fluid and the containing tubes, is often preserved as completely during the utmost degree of exhaustion, as in the fullest flow of healthy plenitude. Further exemplified.

We sometimes, however, meet with cases in which an increased supply of blood is furnished when no such increase is wanted, and the vessels remain of their ordinary capacity. And we also, sometimes, meet with cases in which, from a peculiar diathesis, the capacity of the vessels is unduly contracted, while no change takes place in the ordinary supply of blood. It is evident that in both these contingencies, there must be an equal disturbance of the balance between the substance contained and the substance containing, and that the measure of the former must be too large for the measure of the latter. In other words, there must be in both cases an excess of fluid or a plethora, though from very different, and what are usually regarded as opposite causes; and, hence, it has been distinguished by different names; that proceeding from an actual surplus of blood being denominated a plethora *ad molem*, or a plethora in respect to its general mass, or absolute quantity; and that proceeding from a diminished capacity of the vessels being denominated a plethora *ad spatium*, or a plethora in respect to the space to be occupied. Morbid deviation from the ordinary rule of action: and its consequences: operating in the production of opposite effects: being a Plethora ad molem: and a Plethora adspatium.

It is possible, however, for both these causes of plethora Both causes sometimes coexistent.

GEN. I. Plethora. Plethora.

to exist at the same time, and for the vessels to evince a contractile habit or diathesis, while the blood is produced in an ordinate proportion. And this, in truth, is by no means an uncommon state of the animal frame; for where the excess of blood is the result of a highly vigorous action or entony of the organs of sanguification, we often see proof of the same entony or highly vigorous action through the whole range of the vascular system, and indeed of every other part of the machine; the pulse is full, strong, and rebounding; the muscular fibres firm and energetic, the complexion florid, the whole figure strongly marked. We have here the sanguine temperament; and this kind of plethora has hence been called the SANGUINE PLETHORA.

How indicated.

Hence called Sanguine Plethora.

But we often meet with an inordinate formation of blood in a constitution where the vascular action is peculiarly weak, instead of being peculiarly vigorous, the muscular fibres are relaxed instead of being firm, and the coats of the vessels readily give way, and become enlarged instead of being diminished in their diameter; and where, instead of entony or excess of strength, there is considerable irritability or deficiency of strength in the organs of sanguification.

Yet, though the cause is different, the result is the same; the vessels, notwithstanding their facility of dilatation, at length become distended, and a plethora is produced which has been denominated a plethora *ad vires*; or a plethora as it respects the actual strength of the system. The pulse is here indeed full, but frequent and feeble; the vital actions are languid; the skin smooth and soft; the figure plump, but inexpressive; all which are symptoms of debility of the living power, or rather of that peculiar diathesis which has been distinguished by the name of the serous, phlegmatic or pituitary temperament; and hence this sort of plethora has been commonly denominated SEROUS PLETHORA.

Plethora ad vires what.

How indicated.

Hence called Serous.

We have, hence, a foundation for the two following very distinct species of this affection the names for which are derived from their proximate causes.

1. PLETHORA ENTONICA. SANGUINE PLETHORA.
2. ——————— ATONICA. SEROUS PLETHORA.

SPECIES I.

PLETHORA ENTONICA.

Sanguine Plethora.

PULSE FULL, STRONG, REBOUNDING: MUSCULAR FIBRES FIRM AND VIGOROUS.

Gen. I. Spec. I. To be distinguished from obesity: and seldom found with it.

Sanguine plethora is more common to men, serous to women. It is the disease of manhood, of the robust and athletic. Plethora of this kind must be distinguished from obesity; in effect, they are rarely found in conjunction, for the entony or excess of vigorous action is common to every part of the animal frame, and hence, though it is probable that a larger portion of animal oil is secreted than in many other conditions of the body, yet it is carried off by the activity of the absorbents, and there is no leisure for its accumulation in the cellular membrane. And hence persons labouring under sanguine plethora are rather muscular than fat, and their distended veins lie superficially and appear to peep through the skin.

Diagnostics.

In this state of the blood-vessels, slight excitements produce congestion in the larger vessels or organs. The head feels heavy and comatose; the sleep is disturbed by tumultuous dreams; the lungs labour in respiration, and the muscles feel a want of freedom or elasticity in exercise. If fever arise, it will assume the inflammatory type; and a slight excess in feasting or conviviality will endanger an apoplexy.

Medical treatment.

The cure, however, is not in general accompanied with much difficulty; and far more easily effected in this species than in the ensuing: for the entonic power may readily be lowered by venesection and purgatives; and its disposition to return may commonly be prevented by the use of refrigerants, as nitre, or other neutral salts, and an adherence to a reducent diet and liberal exercise;

Gen. I. Spec. I. Pleth ra entonica. Sanguine plethora Medical treatment.

at the same time it should be observed, that where the plethora depends upon a sanguineous temperament, or phlogistic diathesis, venesection, though rightly employed at first, should be repeated with great caution, as it will tend to generate in the system a periodical necessity for the same kind of depletion, and consequently promote the disease it is designed to cure.

SPECIES II.

PLETHORA ATONICA.

Serous Plethora.

PULSE FULL, FREQUENT, FEEBLE: VITAL ACTIONS LANGUID; SKIN SMOOTH AND SOFT; FIGURE PLUMP, BUT INEXPRESSIVE.

Gen. I. Spec. II.

THE general pathology we have already treated of: and the reasons given under the last species for the usual appearance of sanguine plethora in persons of a spare and slender make, will explain the plumpness of figure and glossiness of skin which so peculiarly mark the species before us. In the first, there is great and universal vigour and rapidity of action; the secretions are all hurried forward in their elaborations, and carried off as soon as produced. In the second, there is little vigour or activity of any kind, and whatever is eliminated is suffered to accumulate. Hence costiveness is a common symptom; the ankles are cold and pituitous; and the animal oil, when once separated and deposited in the chambers of the cellular membrane, remains there, becomes augmented, and produces corpulency and sleekness. The inertness of the body is communicated to the mind; every exertion is a fatigue; and the mind thus participating in the inertness of the body, the countenance, though fair and rounded, is without expression, and often vacant.

Diagnostics.

Debility is always a source of irritability: and hence there is great irregularity, and a seeming fickleness in many of the symptoms by which this species of plethora is characterized, and the results to which it leads. The bowels, though usually quiescent and costive, are sometimes all of a sudden attacked with flatulent spasms, or a troublesome looseness. The appetite is languid and capricious; the heart teased with palpitations, the chest with dyspnœa and wheezing; the head is heavy and somnolent; the urine pale, small in quantity and discharged frequently.

GEN. I. SPEC. II. Plethora tonica. Atonous plethora.

In this species, as in the last, we are compelled to begin with cupping or the use of the lancet. But, though the distended and overflowing vessels demand an abstraction of blood, it should never be forgotten that the relief hereby afforded is only temporary; and that, as the disease is, in this case, an effect of debility, we are directly adding to the cause as often as we have recourse to the lancet. Our leading object should be to give tone to the relaxed fibres; and to take off the morbid tendency to the production of a surplus of blood by counteracting the irritability which gives rise to it. Our attack must be made upon the entire habit, which as far as possible should undergo a total change. The diet should be nutritious, but perfectly simple, and the meals less frequent or less abundant than usual; the sedentary life should give way to exercise at first easy and gentle, but by degrees more active, and of longer extent or duration. Tonics, as bitters, astringents, and sea-bathing, may now be employed with advantage; and the muscular fibres will become firmer as the cellular substance loses its bulk.

Medical treatment.

Leading indication that of giving general tone:

The whole, however, must be the work of time; for although in morals it is a wholesome principle that bad habits cannot too speedily be thrown off, it is a mischievous doctrine in medicine. Health being the middle term between excess and deficiency, every day is giving us a proof that where either of these extremes has become habitual, the system can only be let up or let down

by a gradual process.

GEN. I. SPEC. II. Plethora atonica. Serous plethora.

by slow degrees so as to reach and rest at the middle point with certainty and without inconvenience. Professor Monro has furnished us with several very striking examples of this fact: and particularly among those who had acquired a habit of drinking very large quantities of spirituous potation. A man of this description who had broken both bones of one leg, and was put, for a more speedy recovery, upon a diet of milk and water and water-gruel, was hereby thrown into a low fever with an intermitting pulse, twitching tendons, and delirium; during which he got out of bed and kicked away the box in which his leg was confined. A by-stander and friend of the patient's, of the same irregular habit, ventured to tell the professor that he would certainly kill him if he did not allow him ale and brandy; since, for several years antecedently, he had been accustomed to both these as his common drink; a little of each was, in consequence, permitted him; but the patient's friends did not tie him down to this little; for extending the grant of an inch to an ell, they instantly gave the man a Scot's quart of ale and a gill of brandy, which was his usual allowance for the evening; he slept well and sound; the next morning was free from delirium and fever; and, by a perseverance in the same regimen, obtained a speedy cure without the least accident.*

Illustrated.

* Edin. Med. Ess. Vol. v. Part II. Art. XLVI.

GENUS II.

HÆMORRHAGIA.

Hemorrhage.

FLUX OF BLOOD WITHOUT EXTERNAL VIOLENCE.

GEN. II. Term how employed by Cullen: but incorrectly, and with general disapprobation.

THE term hæmorrhagia, or hemorrhage, is derived from the Greek αἷμα, "sanguis," and ῥηγνυμι, "rumpo." Dr. Cullen has adopted the same name for an order of diseases; but there are few parts of his arrangement that are more open to animadversion, and which in fact have been more animadverted upon, than the present. The order of hemorrhages, or fluxes of blood, ranks in Dr. Cullen's system under the class pyrexiæ, or febrile diseases. Pyrexy, however, is only an accidental symptom in idiopathic hemorrhages of any kind, and has hence been omitted by all, or nearly all, other nosologists in their definitions: while Dr. Cullen himself has found it impossible to apply it to many hemorrhages, among which are all those that are called passive; and he has hence been obliged to transfer the whole of these to another part of his system, notwithstanding their natural connexion with the active, and to distinguish them by the feeble name of *profusions*, instead of by their own proper denomination.

Profusions what.

Blood, from whatever organ it flows, may have two causes for its issue. The vessels may be ruptured by a morbid distention and impetus; or they may give way from debility and relaxation, their tunics breaking without any peculiar force urged against them, or their exhalants admitting the flow of red blood, instead of the more attenuate serum. To the former description of hemorrhages, Dr. Cullen has given the name of active; to the latter that of passive. The distinction is sufficient-

GEN. II. Hæmorrhagia. Hemorrhage.

ently clear; and, under the names already employed in the preceding genus of this system, will lay a foundation for the two following species:—

1. HÆMORRHAGIA ENTONICA. ENTONIC HEMORRHAGE.
2. ———————— ATONICA. ATONIC HEMORRHAGE.

SPECIES I.

HÆMORRHAGIA ENTONICA.

Entonic Hemorrhage.

ACCOMPANIED WITH INCREASED VASCULAR ACTION: THE BLOOD FLORID AND TENACIOUS.

GEN. II. SPEC. I. General pathology. Predisponent cause.

As the outlets of the body are but few, and all of them communicate with numerous organs, we cannot always determine with strict accuracy from what particular part the discharge flows. We have, however, sufficient reason for the following varieties:—

α Narium.	Entonic bleeding at the nose.
β Hæmoptysis.	——— spitting of blood.
γ Hæmatemesis.	——— vomiting of blood.
δ Hæmaturia.	——— bloody urine.
ε Uterina.	——— uterine hemorrhage.
ζ Proctica.	——— anal hemorrhage.

Local cause.

The great predisponent cause of active hemorrhage, wherever it makes its appearance, is plethora or congestion. A plethoric diathesis will, however, only predispose to a hemorrhage *somewhere* or *other*; and hence there must be a distinct local cause that fixes it upon one particular organ rather than upon another. The chief local cause is a greater degree of debility in the vessels of such organ than belongs to the vascular system generally. But there are other and more extensive causes that operate

upon some organs, and which consist in an unequal distribution of the blood and its peculiar accumulation in some vessels rather than in others. Thus, some organs acquire developement and perfection sooner than others, of which the head, peculiarly large even in infancy, furnishes us with a striking example: and, in the promotion of such developement, the flow of the blood is directed with greater force and in greater abundance. And hence, while the coats of the blood-vessels in this organ are yet tender, and destitute of that firmness which they derive from age, we have reason to expect hemorrhage as a frequent occurrence and particularly from the vessels of the nostrils; because there is in the nose, for the use of the olfactory sense, a considerable net-work of blood-vessels expanded on the internal surface of the nostrils, and covered only by thin and weak integuments. And on this account, we see why young persons are so much more subject to bleedings from this organ than those in mature life. Hæmoptysis, or spitting of blood, takes place more commonly a few years later, and when the animal frame has acquired its full growth, and consequently the vascular system its full extent or longitude. Antecedently to this, the impetus and determination of blood are greater in the aorta and its extreme ramifications than in the pulmonary artery, because more of the vital fluid is demanded for the progressive elongation of the very numerous arteries that issue from the former: and, consequently, a greater tendency to plethora exists in this direction till the age of about fifteen or eighteen than in the direction of the lungs. Till this period of life, therefore, we have no reason to expect hemorrhage from the respiratory organs. When this term, however, has arrived, the bias is thrown on the other side; and the vessels of the corporeal and of the pulmonary circulation being equally perfected, the tendency to accumulation will be in the latter, in consequence of their shorter extent. This tendency will continue till about the age of thirty-five; which is exactly correspondent with the observation of Hippocrates, who has remarked that hæmoptysis commonly occurs between

GEN. II. SPEC. I. Hæmorrhagia entonica. Entonic hemorrhage.

Hemorrhage from the nose whence. And why chiefly in young persons.

Hæmoptysis whence. And why chiefly in mature life.

GEN. II. SPEC. I. Hæmorrhagia entonica. Entonic hemorrhage.

the age of fifteen and that of five and thirty. We have explained why it does not often occur before fifteen, but what is the reason of its seldom occurring after the latter period? Dr. Cullen has ingeniously explained it in the following manner. The experiments of Sir Clifton Wintringham, he observes, have shown that the density of the coats of the veins compared with that of the arteries is greater in young than in old animals; from which it may be presumed that the resistance to the passage of the blood from the arteries into the veins is greater in young animals than in old; and while this resistance continues, the plethoric state of the arteries must be perpetually kept up. The very action, however, of an increased pressure against the coats of the arteries gradually thickens and strengthens them, and renders them more capable of resistance; whence in time they come not only to be on a balance with those of the veins, but to prevail over them; a fact which is also established by the experiments just adverted to.

Why a rare occurrence after thirty-five.

Whence hæmatemesis; anal hemorrhage;

After thirty-five, therefore, the constitutional balance becomes completely changed, and the veins instead of the arteries are chiefly subject to accumulation. The greatest congestion will usually, perhaps, be found in the vena portarum, in which the motion of the venous blood is slower than elsewhere; and such congestion alone will frequently act upon the neighbouring arteries, and induce what may be called a reflex plethora upon them in consequence of their inability of unloading themselves: and hence, the chief origin of hæmatemesis, and hemorrhage, and various other hemorrhages from the abdominal and pelvic organs.

and hemorrhages from other abdominal or pelvic organs.

Active hemorrhage frequently a result of incidental causes: as violent exertion external or internal: suppressed evacuations:

All these organs, however, are exposed to hemorrhage from incidental causes, as well as that constitutional change which has a tendency to produce the disease vicariously. Thus, hemorrhage in all of them is occasionally produced by violent exertion, as great muscular force; vehement anger, or other passions or emotions of the mind; severe vomiting, or coughing; suppressed evacuations of various kinds, especially hemorrhoids of long standing,

catamenia, habitual ulcers, issues, or chronic eruptions of the skin :* as also by the wound of a leech swallowed accidentally.† But in this last case it is probable that the living principle of the stomach is in a state of weakness, as in all other cases in which exotic worms are found to continue alive under its action : since we know that this action when in full vigour is sufficient to destroy oysters, frogs, slugs, leeches, and various other cold-blooded animals in a short time. Hæmoptysis is also said by many writers to have been produced by leeches accidentally taken into the stomach by a draught of water.‡ But it is probable that in this case there is a deception : and that the blood discharged by coughing from the trachea has first passed into it from the stomach and mouth.

GEN. II. SPEC. I. Hæmorrhagia entonica. Entonic hemorrhage. shock of electricity : wound of a leech in debilitated stomachs.

Local stimulants are also an occasional cause. Thus the vessels both of the kidneys and rectum have been excited to hemorrhage by an injudicious use of aloes, terebinthinate preparations, and pungent alliaceous sauces. And the former by cantharides, whether applied externally or internally : for Schenck and other writers have given examples of hæmaturia excited in irritable constitutions by vesicatories alone.§

Local stimulants often occasional causes.

Occasionally, however, all the various kinds of hemorrhages before us have assumed a different character, and proved salutary and critical. Thus, cephalitis has often ceased suddenly on a free and sudden discharge of blood from the nostrils ; pneumonitis, from what has been deemed an alarming hæmoptysis ; visceral infarctions, from a liberal evacuation of the hemorrhoidal vessels ; a jaundice has been carried off by a profuse hæmaturia,‖ and fevers of various kinds have instantly yielded to a spontaneous appearance of any of them.

Hemorrhage sometimes critical and salutary.

* Percival's Essays, II. p. 181.

† Galen. De Loc. Affect. Lib. IV. Cap. V.—Riverius, Observ. Med. Cent. IV. Obs. 26.

‡ Galen. De Loc. Affect. Lib. IV. Cap. V.—Borelli, Cent. I. Obs. 24.

§ Schenck, Lib. VII. Obs. 124. ex Langio.—Hist. Mort. Uratislav. p. 58.

‖ Schenck, Obs. Lib. III. Serm. II. N. 253.

GEN. II. SPEC. I. Hæmorrhagia entonica. Entonic hemorrhage.

Such hemorrhages, however, though salutary in their onset, must be cautiously watched; since, if not checked when they have accomplished their object, they are apt to pass into a chronic or periodic form. Hence many persons have monthly discharges from the rectum; others from the nostrils; others again, occasional or periodic, from the lungs; and a few from the stomach.* Tulpius gives a case of chronic hæmoptysis that continued for thirty years;† and there are other instances of much longer duration.‡

Apt to pass into a chronic form.

There is also another reason for an early attention to spontaneous hemorrhages; and that is, the profuseness of the discharge which sometimes takes place, and the alarming exhaustion which follows. Dr. Banyer, in the Philosophical Transactions,§ gives a case of this sort, in which the discharge was from the bladder; Büchner, another case from the same organ, in which it amounted to not less than four pounds:‖ and other writers bring examples of its having proved fatal.

Flow of blood often profuse.

The largest quantities, however, are usually lost from the nostrils. Ten, twelve, and upwards of twenty pounds have been known to flow away before the hemorrhage has ceased. Bartholin mentions a case of forty-eight pounds,¶ Rhodius another of eighteen pounds lost within thirty-six hours;** and a respectable writer in the Leipsic ACTA ERUDITA, a third, of not less than seventy-five pounds within ten days;†† which is most probably nearly three times as much as the patient possessed in his entire body at the time the hemorrhage commenced. In the Ephemera of Natural Curiosities is a case in which the quantity indeed is not given, probably from the difficulty of taking an account of it, but which continued without cessation for six weeks.‡‡

Largest quantities lost are generally from the nostrils.

Examples.

* Rhodius, Cent. II. Obs. 64.—Ab Heer. Introduct. in Archiv. Archei.

† Lib. II. Cap. II. ‡ N. Act. Nat. Cur. Vol. I. Obs. I. § Vol. XLII.

‖ Miscell. 1728. p. 1496. ¶ Anat. Renov. Lib. II. Cap. VI.

** Cent. I. Obs. 90. †† Lib. 1688. p. 205.

‡‡ Dec. I. Ann. III. Obs. 243.

GEN. II. SPEC. I. α H. entonica narium.

Entonic bleeding at the nose.

Precursive symptoms common: but not always to be met with.

Occasional causes.

In ACTIVE HEMORRHAGES FROM THE NOSTRILS, the epistaxis of many writers, the discharge is usually preceded by some degree of local heat and itching; and occasionally by a flushing of the face, a throbbing of the temporal arteries, a ringing in the ears, or a pain or sense of weight and fulness in the head. Yet not unfrequently the blood issues suddenly without any of these precursories; for, as we have already observed, the arteries distributed over the Schneiderian membrane are very numerous and superficial, and a very slight irritation is often sufficient to rupture them. That insolation or exposure to the direct rays of the sun, a cold in the head, or cold applied to the feet or hands, coughing, or sneezing, especially upon the use of sternutatories, an accidental blow upon the upper part of the nose or forehead, or a jar of the entire frame, as on stumbling, should be sufficient to produce this effect, can easily be conceived; and these, in truth, are the common occasional causes: but it is singular that it should follow, in some highly irritable idiosyncrasies, upon such very trivial excitements as have been noticed by many pathologists. Thus, Bruyerin* gives an example in which the nostrils flowed with blood upon smelling at an apple; Rhodius, upon the smell of a rose;† and Blancard, upon the ringing of bells:‡ and when we find the same effect produced by various emotions of the mind, as terror, anger, and even a simple excitement of the imagination,§ we may readily trace by what means the philosophers and poets of the eastern world, and even some of those of the western, were led to regard the nose as the seat of mental irritation, the peculiar organ of heat, wrath, and anger; and may discover how the same term אַף (ap or aph) came to be employed among the Hebrews to signify both the organ and its effect, the nose and the passion of anger to which it was supposed to give rise.

Nostrils why regarded as the seat of mental irritation.

* Bruyerinus, De Re Cibariâ. Lib. I. Cap. 24.

† Rhodius, Cent. III. Obs. 99.

‡ Blancard, Collect. Med. Phys. Cent. VI. Obs. 74.

§ Rhodius, Cent. I. Obs. 89.

GEN. II. SPEC. I. α H. entonica narium. Entonic bleeding at the nose.

We have already observed that the quantity of blood discharged by a spontaneous hemorrhage from the nostrils is sometimes enormous. This, however, is a more common result of passive than of active hemorrhage; and is more usually found in advanced than in early life: the two stages in which nasal hemorrhage chiefly shows itself. And where it frequently returns it is apt, like the hemorrhoids, to form a habit of recurrence that cannot be broken through without danger, except by an employment of evacuants, or some other drain.*

Medical treatment. Often revellent or critical: and should not be suddenly restrained.

If it be evidently connected with entonic plethora, or accompanied with the local symptoms just enumerated, it will afford a more effectual relief than bleeding in any other way, and should not be restrained till it has answered its purpose. Even a small portion of blood, not amounting to more than a table-spoonful or two, when thus locally and spontaneously evacuated, has afforded, on some occasions, a wonderful freedom and elasticity to an oppressed and heavy head: and, when more copious, has probably prevented an apoplectic or epileptic fit, as it has often formed a salutary crisis in inflammation of the brain, or fevers in which the brain has been much affected.

In other cases to be checked at once; and by what means.

But when these reasons do not exist, the bleeding should be checked by astringent applications. Cold is the ordinary application for this purpose, and it commonly succeeds without much trouble. Cold water may be sniffed up the nostrils, or thrown up with a syringe; but the exertion of sniffing, or even the impetus of the water alone, where a syringe is employed, sometimes proves an excitement that more than counterbalances the frigoric effect. Independently of which there is an advantage in leaving the blood to coagulate on the ruptured orifice of the vessel, which these methods do not allow. By means of a syringe, however, we can throw up, when necessary, astringents of more power than cold water, as

*J. P. Frank, De Cur. Hom. Morb. Epit. Tom. VI. Lib. VI. Pars III. 8vo. Viennæ. 1821.

vinegar, or the sulphuric acid properly diluted, or a solution of sulphate of zinc, copper, iron, or lead, after which we should force up tents of lint moistened with the same, and particularly with extract of lead diluted with only an equal quantity of water, as high as we are able with a probe or small forceps, so as to form a tight compress: the styptic agarics can be rarely used to advantage. The face may, at the same time, be frequently immersed in ice-water, or water artificially chilled to the freezing point; and the temples, or even the whole of the head, be surrounded with a band or napkin moistened with the same, and changed as soon as it acquires the warmth of the skin. When tents are used, they have sometimes been illined with moistened powder of charcoal, which, of itself, has proved an excellent styptic. Cold applied to the back will succeed, but often fails; it is more certain of success when applied to the genitals.

GEN. II. SPEC. I. α H. entonica narium. Entonic bleeding at the nose.

Emetics have occasionally been of service, and are recommended by Stoll.* The principle upon which they may be presumed to act will be noticed under hæmoptysis. The bleeding has sometimes been checked by a sudden fright,† probably from the cold sweat that so often attends such an emotion: and Reidlin gives a case in which it was cured by sneezing;‡ but this was probably a case of atonic hemorrhage, in which the spasmodic action might assist in corrugating the mouths of the bleeding vessels.

It is rarely necessary or even proper in this variety of hemorrhage to employ any internal astringent or other tonic: but if this discharge should be excessive, and produce debility, the same plan may be resorted to as will be recommended under the ensuing species.

Internal astringents not often necessary.

In HÆMOPTYSIS OR SPITTING OF BLOOD, it is not always easy to determine from what vessel or even from what organ the bleeding proceeds: for the blood may issue

β. H. entonica Hæmoptysis. Entonic spitting of blood.

* Rat. Med. Part III. p. 21.

† Panarol. Pentecost. v. Obs. 27.

‡ Linn. Med. Ann. I. Obs. 24.

GEN. II. SPEC. I. β H. entonica Hæmoptysis. Entonic spitting of blood.

from the posterior cavity of the nostrils, or from the fauces as well as from the lungs. If, however, from the first, it will cease upon bending the head forward or lying procumbent, and will probably flow from the nose: if from the second, we shall commonly be able to satisfy ourselves by inspection. Blood from the stomach is of a darker colour, thrown up by vomiting, and betrays an intermixture of food.

Not easy to determine from what quarter the blood flows.

Symptoms indicating its proceeding from the lungs:

If the hæmoptysis produced be from the lungs, and belong strictly to the present species, and more especially if it be a result of entonic plethora, the blood will be chiefly thrown up by coughing; and the discharge will be preceded by flushed cheeks, dyspnœa, and pain in the chest. There is usually, also, a sense of tickling about the fauces, which often descends considerably lower; Salmuth asserts that he has known it extend to the scrobiculus cordis.* These symptoms, moreover, indicate that the blood flows from a branch of the pulmonary rather than of the bronchial artery. The blood is here of a florid hue, and the hemorrhage sudden and often copious. If a branch of the bronchial artery give way, the flow of blood is usually much slower, and smaller in quantity: there are no precursive symptoms, the blood is rather hawked or spit up intermixed with saliva, and, from being longer in its ascent, is of a darker colour. From its lodgement, however, in the air-vessels, it becomes a cause of irritation, and a frothy cough ensues, sometimes accompanied with a little increase of the pulse and other febrile symptoms, as a feeling of heat and some degree of pain in the breast, which subsides after the ejection, and returns if there be a fresh issue.

from branches of the pulmonary artery:

from branches of the bronchial artery.

Prognostics;

favourable:

If the structure of the lungs be sound, we have no reason to prognosticate danger. On the contrary it often affords great relief to a gorged liver, and has proved critical in obstructed menstruation. Excreted with the sputum it is frequently serviceable, as we have already observed,

* Cent. III. Obs. 43.

in cases of asthma, pleurisy, and peripneumony. But if it have been preceded by symptoms of phthisis, or a strumous diathesis, there is a great reason for alarm; for we can have little hope that the ruptured vessel will heal kindly and speedily, and have much to fear from the fresh jets, by which the extravasated blood becomes deposited and forms a perpetual stimulus in an irritable organ.

GEN. II. SPEC. I. β H. entonica Hæmoptysis. Entonic spitting of blood. unfavourable.

The general pathology has been already laid down. The incidental causes are misformation of the chest; undue exertion of the respiratory muscles, whether in running, wrestling, singing, or blowing wind-instruments; excess in eating and drinking; or a violent cough. As a symptom or sequel, it occurs in wounds, phthisis, or the suppression of some accustomed discharge.

Occasional causes.

In active hemorrhage from the lungs, venesection is one of the most important steps towards a cure; and the blood should be drawn freely at once, rather than sparingly and repeatedly; though a second and even a third copious use of the lancet will often be found expedient. Emetics have been recommended, but they are of doubtful effect. They augment the vascular volume by relaxing the capillaries; but they stimulate locally by the act of rejection. Drastic purgatives are avoided because of the straining; but the straining in vomition is greater and more direct.

Medical treatment. Bleeding: Emetics: Drastic purgatives to be avoided.

Dr. Brian Robinson of Dublin, who was one of the most strenuous promoters of this mode of practice in his day, accounted for the benefit of emetics by the constriction which he conceived they produce upon the extreme vessels every where; but to act thus they should rather nauseate than vomit; for in nausea we have great vascular depression, and a cold and general collapse on the surface; while vomiting is known to rouse the system generally and determine towards the surface. Upon the recommendation of Dr. Robinson, Dr. Cullen followed the plan in several cases: "but in one instance the vomiting," says he, "increased the hemorrhage to a great and dangerous degree; and the possibility of such an accident again happening has prevented all my further trials of

Different effects of vomiting and nauseating.

GEN. II. SPEC. I. β H. entonica Hæmoptysis. Entonic spitting of blood. Treatment. Vomiting has increased the hemorrhage. Mild cathartics and sedatives.

such a remedy."* Nauseating has on this account been preferred on the continent to full vomiting in hemorrhage from the stomach, and indeed various other organs as well as from the lungs; and ipecacuan in small doses has been generally preferred to the metallic salts, as more manageable; half a grain or even a quarter of a grain being given every quarter of an hour for many hours in succession.†

In general, however, we shall find it as successful and far less distressing to employ mild aperients and sedatives. The first, and particularly neutral salts, are alone of great benefit, and their action should be steadily maintained. Sedatives are of still higher importance, and especially those that reduce the tone of the circulation, as nitre and digitalis. The first, in about ten grains to a dose, should be given in iced water, and swallowed while dissolving; the dose being repeated every hour or two according to the urgency of the case. If there be much cough, it must be allayed by opium and blisters. Local astringents we cannot use, and general astringents are here manifestly counter-indicated, however useful in passive hemorrhage: though it should be recollected that, when an active hemorrhage from the lungs is profuse and obstinate, the vessels lose their tone and fall into a passive state.

γ H. entonica Hæmatemesis. Entonic vomiting of blood. Term how employed by the Greek writers. Blood thrown up from the stomach now distinguished from that thrown up from the lungs.

In HÆMATEMESIS the blood is evacuated from the alimentary canal at either extremity, whether that of the mouth or of the anus: for the term is used thus extensively by the Greek writers. In both cases it is discharged in active hemorrhage with a considerable expulsive effort; and the discharge is preceded by tensive pain about the stomach; and accompanied with anxiety and faintness.

The quantity discharged from the stomach is in most cases larger than what is discharged from the lungs, and of a deeper hue: it is also thrown up by the act of vomiting, and usually intermixed with some of the contents of the stomach. And hence, there is no great difficulty in

* Mat. Med. Part II. Ch. XIX. p. 470.

† Keck, Abhandlung und Beobachtungen.—Medicinisches Wochenblatt, 1793. No. 49.

determining as to the source of the hemorrhage. Hæmatemesis, however, is far more frequently a disease of atony than of entony, and hence chiefly belongs to the next species. Its usual exciting causes, when it occurs under an entonic character, are concussion or other external violence, as a shock of electricity,* some strong emotion of the mind, as rage or terror, vomiting or pregnancy. It has also occasionally been found to afford relief in suppressed catamenia.

GEN. II. SPEC. 1. γ H. entonica Hæmatemesis. Entonic vomiting of blood. Chiefly a disease of atony. Usual causes when entonic.

The pathology we have already given; the blood may proceed from the spleen, the liver, the pancreas, the stomach itself, or the smaller intestines; and the mode of treatment should be as already advised for hæmoptysis.

In HÆMATURIA the blood is evacuated at the urethra; and the evacuation is preceded by pain in the region of the bladder or kidneys, and accompanied with faintness. The blood is sometimes intermixed with urine, but occasionally flows pure and uncombined: and in this last state the disease is called by Vogel stymatosis, and the bleeding is supposed to proceed from the bladder rather than from the kidneys; that from the latter being smaller in quantity, and remaining a longer time in the passages, and consequently of a darker colour. There is some ground for this opinion; for when the bladder is the seat affected, there is far more local pain and faintness than where the affection is in the kidneys. Hippocrates, indeed, has observed that where the blood flows pure, copiously, and suddenly, and without pain, it proceeds from the kidneys; but where it is small in quantity, and of a blackish colour, and accompanied with much heat or pain, or both, its source is the bladder. But this remark, instead of opposing, tends rather to corroborate the preceding; for according to both views the seat of disease is distinguished by the greater or less degree of uneasiness that attends the discharge; and this whether the quantity discharged be larger or smaller.

δ H. entonica Hæmaturia. Entonic bloody urine. Precursory symptoms. Stymatosis of Vogel. Some ground for the distinction it imports.

It is not often, though sometimes, an entonic disease

Not often an entonic affection.

* Percival's Essays, Vol. II. p. 181.

GEN. II. SPEC. I. ♂ H. entonica Hæmaturia. Entonic bloody urine.

or an active hemorrhage. Its exciting cause is frequently a stone in the bladder; or a violent blow on the kidneys, or on the bladder, especially when the latter is full. It is also said by Schenck* and other writers to be occasionally produced by cantharides whether employed externally or internally; for vesicatories alone are accused of occasionally exciting this complaint in irritable constitutions.†

Medical treatment.

In connexion with the general course of treatment already recommended in the preceding varieties, the compound powder of ipecacuan may here be employed with great advantage; for the pain and irritation are often intolerably distressing, and on this account demulcent drinks are frequently found to produce considerable relief.

♀ H. entonica uterina. Entonic uterine hemorrhage.

In UTERINE HEMORRHAGE the blood is discharged from the womb with a sense of weight in the loins, and of pressure upon the vagina. This is the menorrhagia of most of the nosologists, and is often, but very erroneously, described as an excess of the menstrual flux. It is in truth a real hæmorrhage or issue of blood, instead of menstrual secretion, which is often entirely suppressed, though sometimes a small but inadequate portion is intermixed with the uterine bleeding: and hence Hoffman has properly denominated it uteri hæmorrhagia. It occurs both in an entonic and an atonic state of the vessels, and especially of the general system: and from the remarks offered under PLETHORA, it is not at all to be wondered at that hemorrhage should in both conditions take place from the uterus very frequently, and perhaps more so than from any other organ.

Often mistaken for profuse menstrual flux.

Ordinary cause and progress.

For reasons we shall have occasion to explain in a subsequent part of this work, the uterus, from the period of the completion of the female form, is stimulated, once in every lunation, to the secretion and elimination of a peculiar fluid, which exhibits the colour, though it is deficient in many of the properties of blood; and for this

* Lib. VII. Obs. L. 24. ex Langio. † Hist. Mort. Uratislav. p. 58.

purpose the uterine arteries are, at such seasons, peculiarly turgid and irritable. There is hence always a tendency on such occasions to a hemorrhage in this quarter in females of a firm and robust texture, and of a plethoric habit. But if from cold or any other cause the uterine secernents do not at these seasons fulfil their office, and throw forth the proper fluid, the uterine arteries will be inordinately gorged; the regular stimulus will be greatly augmented; pain, tension, and spasm will extend over the loins; and the extremities of the vessels be ruptured, or their mouths give way by anastomosis; and a considerable hemorrhage be the consequence.

GEN. II. SPEC. I. ε H. entonica uterina. Entonic uterine hemorrhage.

This is the ordinary period in which uterine hemorrhage takes place; though it may occur during any part of the interval between the catamenial terms, upon any of the occasional causes that operate upon other organs, and form the preceding varieties: as it is also well known to occur at times, with great violence, during pregnancy and in child-bed.

Occasionally produced by other causes.

When we come to treat of diseases appertaining to the sexual organs, we shall have to notice some singular cases of precocity in female infants, and especially that of a regular menstruation. It is upon this principle alone that we can account for uterine hemorrhage in newborn infants; of which the medical records give several examples; and especially the Ephemerides of Natural Curiosities.

Has occurred in newborn infants.

In suppressed menstruation uterine hemorrhage affords relief to the spasms and pains that harass the loins, and the head-ache and difficulty of breathing which have usually preceded the lumbar distress. But the discharge may be immoderate, and become habitual. And it is hence best to be upon our guard, and to use venesection as a substitute; and to prevent or diminish the spasmodic action by gentle aperients and the sedatives already recommended in hæmoptysis; after which the case will become a disease of suppressed menstruation alone, and must be treated according to the method recommended under that malady; for a restoration of the catamenial

Sometimes serviceable, but apt to become habitual.

Treatment.

GEN. II. SPEC. I. •H. entonica uterina. Entonic uterine hemorrhage.

secretion is its natural cure. I may here, however, observe that when the suppression of this secretion has been of some standing and an uterine hemorrhage has periodically taken its place, accompanied with distressing pains in the whole circle of the pelvic region, we can sometimes suddenly restore a healthy action to the organ by a plan of anticipation. For this purpose I have prescribed venesection about ten days before the return of the monthly paroxysms; and having thus taken off plethoric impetus, I have, a few days afterwards, recommended the hip bath to be used in a tepid state, every night, and persevered in till the period of relapse; when I have often found that there has been neither tension nor spasm; that the loins have continued easy, and the hemorrhage has yielded to the natural secretion.

Cure by anticipation.

ζH. Entonica proctica. Entonic anal hemorrhage.

In HEMORRHAGE STRICTLY ANAL the flux of blood issues chiefly from the hemorrhoidal vessels; and as these are large, and but little supported by any surrounding organization, they readily give way both in an entonic and atonic state of the frame, and particularly in case of plethora, upon very slight excitement; as in straining to expel hardened feces, taking cold in the feet, or walking a little too far. Irritants introduced by the mouth have also proved a frequent cause of this variety of hemorrhage; as an injudicious use of aloes, terebinthinate preparations, or even pungent alliaceous sauces. The irritation of piles is also a very common cause; and hence by some writers anal hemorrhage is only treated of as a symptom of that variety of this last disease which is known by the name of bleeding piles. But this is highly incorrect; as anal hemorrhage often occurs, and very profusely, where no piles have ever been experienced.

How produced.

Sometimes a symptom of piles: but not necessarily so. Precursive symptoms.

This power of hemorrhage when active, as it is called, or in an entonic habit, is usually preceded by a sense of weight and pain within the rectum, and sometimes by a load in the head. And it has often, as already observed, proved critical and salutary, and carried off congestions from the abdominal viscera. It is however, peculiarly

apt to become profuse, and to establish an order of recurrence; and hence must be overpowered by the reducent and sedative plan recommended in most of the preceding varieties, and particularly in that of hæmoptysis. The aperients employed, however, should here be peculiarly mild and alterant; and sulphur, which does not readily dissolve in the course of the intestinal canal, and often reaches the rectum in an unmixed state, is one of the best, and is often found strikingly serviceable. All stimulant foods, moreover, must be especially avoided; and the ordinary drink should be water, soda-water, or lemonade.

Gen. II. Spec. I. ζ H. Entonica proctica
Entonic anal hemorrhage.
Curative process.
Mild aperients.
Sulphur.

Here also we are able, as in the case of hemorrhage from the nose, to employ local astringents, though it would be improper to use those that act generally, so long as plethora or an entonic habit continues. The patient may sit in a bidet of ice-water, or water cooled artificially to the freezing point, or may use a cold hip-bath, and have injections of cold-water, or astringent lotions, as of alum, zinc, or even lead, thrown up the rectum; the latter of which should be in such proportion as to remain there for half an hour or an hour.

Local astringents when unadviseable.

SPECIES II.

HÆMORRHAGIA ATONICA.

Atonic Hemorrhage.

ACCOMPANIED WITH GENERAL LAXITY OR DEBILITY; AND WEAK VASCULAR ACTION; BLOOD ATTENUATE AND OF A DILUTED RED.

THOUGH the effect in this species is the same as in the preceding, the proximate cause, as well as the more obvious signs, are directly opposite. The general pathology has been given in the introductory remarks to the genus, and the more common organs from which the hemorrhage

Gen. II. Spec. II.

GEN. II. SPEC. II. Hæmorrhagia atonica.

proceeds are the same as already noticed under the preceding species; and hence the varieties of that may be regarded as those of the species before us.

Atonic hemorrhage. Treatment. How produced.

When plethora is the remote cause, which it often is, it is atonic plethora, or plethora of debility; but whatever has a tendency to loosen or enervate the tone of the solidum vivum, or living fibre, will lay a foundation for this kind of hemorrhage. It is hence a characteristic disease of advanced age, as entonic plethora is of youth and adult life; and often takes place in those whose vigour is reduced by meagre or innutritious food, close confinement without exercise in a foul and stagnant atmosphere, or immoderate indulgence in the pleasures of wine or sexual intercourse. Hence too, its frequent occurrence, as a symptom, in tabes, atrophy, struma, scurvy, and low fevers.

Why a characteristic disease: of age and of debilitating powers.

The CHARACTERS of the several varieties of this species, as distinguished from those of the preceding, are as follow; for it is not necessary to put the varieties themselves into a tabular form:—

α H. atonica narium. Atonic bleeding from the nose.

In HEMORRHAGE FROM THE NOSTRILS, the blood flows without heat or head-ache.

β H. atonica Hæmoptysis. Atonic spitting of blood.

In that from the RESPIRATORY ORGAN, it is usually produced without even the exertion of coughing, and is often accompanied with a scirrhous or calculous affection of the lungs; the countenance is pale and emaciated.

γ H. atonica Hæmatemesis. Atonic vomiting of blood.

In HEMORRHAGE FROM THE ALIMENTARY CANAL, the blood is discharged without tensive pain: though there must necessarily be an expulsive effort; and, from the inanition hereby produced, some degree of nausea and faintness.

δ H. atonica Hæmaturia. Atonic bloody urine. Occurs sometimes during coition.

When evacuated by the URETHRA, there is, for the same reason, faintness, but little or no previous pain. The most singular and severest examples of hemorrhages from the urethra are those that have occurred during coition; sometimes intermixed with semen, sometimes instead of it, and sometimes immediately after emission. The individuals have been generally persons of highly irritable and delicate habits; and who have weakened

themselves by too free an indulgence in pleasures of this kind. Numerous instances of this sort of hemorrhage are given in the Collections of Medical Curiosities, and especially in several of the German Ephemerides. GEN. II. SPEC. II. § H. atonica Hæmaturia. Atonic bloody urine.

There is little pain in ATONIC HEMORRHAGE FROM THE UTERUS: and it generally occurs at the natural cessation of the menstrual flux, or within a few years afterwards. As a concomitant, hemorrhage from this quarter is also frequently found in a scirrhous, cancerous, or other morbid states of the uterus, in whatever period of life these may occur; which, however, they do most usually after the age of forty or fifty. § H. atonica uteri. Atonic uterine hemorrhage.

ATONIC HEMORRHAGE FROM THE ANUS ordinarily takes place spontaneously with little or no pain; but commonly with varices or congestion of the hemorrhoidal vessels, and is very apt to produce a habit of recurrence. § H. atonica proctica. Atonic anal hemorrhage.

In all these varieties venesection must be had recourse to sparingly; and never, unless where we have satisfactory evidence of atonic plethora or congestion. It may sometimes be requisite to use the lancet in nasal hemorrhage, for the head may feel oppressed and drowsy: and it will still more frequently be necessary in hemorrhage from the uterus; but the blood abstracted should rarely exceed seven or eight ounces; and in all other varieties, as a general rule, it will be better to withhold our hand, and to proceed at once with a tonic plan of treatment. Medical treatment of atonic hemorrhage. Blood should be abstracted with caution.

Into this plan we may, in the present species, freely admit the use of general astringents in conjunction with their local application, however objectionable in the preceding; for a laxity and inelasticity of the fibrous structure are among the chief symptoms we have to oppose: and hence the mineral acids and metallic salts may be had recourse to with great advantage along with bitters; and, with a few exceptions, we cannot well err in the selection. The preparations of iron may be rather too heating in hæmoptysis, and perhaps in all atonic hemorrhages accompanied with much irritability. One of its mildest and best forms is that of a subcarbonate; and perhaps the best Free use of astringents and other tonics.

GEN. II. SPEC. II. Hæmorrhagia atonica. Atonic hemorrhage.

mode of obtaining it in this form is by the celebrated composition of Dr. Griffiths. The myrrh is also in his preparation a useful article for the present purpose, and we shall rarely do better than employ it. In the London Pharmacopœia, it is given under the name of mistura ferri composita.

Opium how far useful.

From the manifest power of opium to restrain most evacuations, it has often been employed in hemorrhages. It does not appear, however, to have any direct effect in checking the discharge; and in entonic hemorrhages, and especially when employed early, has been highly mischievous. But where in hæmoptysis there is a perpetual cough from irritation, or in uterine hemorrhages a frequent recurrence of spasmodic pains, it has been tried with considerable success. And the same remark will apply to hyoscyamus, and various other narcotics, which seem to be only useful on the same account.

Cinchona where most serviceable

Cinchona, which is peculiarly objectionable in the preceding species, may here be had recourse to with considerable promise. It seems, however, to be chiefly serviceable in uterine hemorrhage, where the disease depends upon a laxity of the extremities of the vessels, which are therefore readily opened by every irritation applied to the system or to the diseased part. Whether in this case it acts altogether as a bitter, as supposed by Dr. Cullen, or partly also as an astringent, it may be difficult to determine; but the question is not of importance.

For other general roborants to which it may be necessary to have recourse, the reader may turn to the treatment of LIMOSIS *dyspepsia*,* or indigestion; and he may govern the patient's diet and regimen by the general plan there laid down.

Local astringents and refrigerants.

The local astringents and refrigerants, already recommended under the former species, may be here employed with even less reserve: and where the bleeding has become chronic, which it is far more likely to do than in entonic hemorrhage, or has been so profuse as very consi-

* Class I. Ord. I. Vol. I. pp. 164. 172.

derably to exhaust the system, a little wine or some other cordial should be administered as soon as we are consulted: for, however small the vessel that is ruptured, its orifice is incapable of contracting from a total loss of tone: and hence a diffusible stimulus gives it the irritation it stands in need of, and forms a salutary constringent. A striking case of this kind has already been given in treating of accidental hemorrhages from extracting teeth:* and it is not long since that the author was requested to attend in a similar hemorrhage from the nose. The patient was a lady of about fifty years of age, of slender and delicate frame, who had for some years ceased to menstruate. The bleeding had continued incessantly for three or four days, during which she had been restrained to a very low diet, and allowed nothing but toast and water for her common drink. She was faint, felt sick, and had a feeble pulse, and must have lost many pounds of blood, though no exact measure had been taken. I gave her, instantly, a free draught of negus made with port wine, prescribed camphor mixture with the aromatic spirit of ammonia, had the nostrils syringed with equal parts of tincture of catechu and water, and applied a neckerchief wetted with cold water round the temples, directing it to be renewed every ten minutes. In half an hour the hemorrhage ceased, and on the ensuing day I found no other symptom than weakness, for which a nutritious but inirritant regimen was prescribed. A few days afterwards, the hemorrhage returned from sneezing or some other incidental stimulus, and was restrained, as I was told, for I did not see her, by a recurrence to the same plan. I recommended, however, carriage-exercise, and an excursion to the sea-coast, which was immediately complied with, and there was no recurrence of the disease.

GEN. II. SPEC. II. Hæmorrhagia atonica. Atonic hemorrhage. Treatment. Stimulants in what way useful. Illustrated.

To effect the same intention, I have occasionally advised cardiacs combined with astringents in hæmatemesis, where the discharge of blood has been profuse, and has continued for some days, and the patient has become

Further exemplified.

* Vol. I. p. 47

GEN. II. SPEC. II. Hæmorrhagia atonica. Antonic hemorrhage. Treatment.

considerably exhausted: and I do not recollect an instance in which the plan has proved unfriendly. In like manner, in very great faintness or deliquium produced by a copious and protracted hemorrhage from the uterus, I have had the vagina injected with equal parts of port wine and water acidulated with sulphuric acid, and have found it equally successful.

Acetate of lead.

The acetate of lead is also a preparation which in all such cases ought to be tried internally. It was at one time greatly out of favour from the writings of Sir George Baker and the concurrent opinion of Dr. Heberden. Of the mischievous effects of various preparations of this metal when employed internally, the former has given numerous examples, and concludes with the following corollary: "that lead taken into the stomach is a poison; I do not say ex proprietate naturæ et totâ substantiâ; but which is capable of doing much more hurt than good to the generality of men in all the known ways of using it: and, consequently, that it cannot be avoided with too much caution."* In corroboration of which Dr. Heberden tells us that its good effects are by no means so certain as its mischief: and in most cases would be far overbalanced by it. In the form of an acetate, however, all its evils seem to be subdued by a combination with opium; for the first distinct knowledge of which the medical world is indebted to the penetration and judgment of Dr. Reynolds, who tried it, in this state of union, in various cases with the most perfect success, and without the least unfavourable symptom whatever, whether of pain or even costiveness. He also employed with equal benefit the old tinctura saturnina, and the sugar of lead; of the former, giving eighteen drops with three drops of laudanum to a dose, and repeating the dose every four hours in a little barley-water; of the latter, giving one grain withthree drops of laudanum mixed into a pill with conserve of roses; to be repeated every six hours. And under both forms he employed these

Its evils corrected by opium, as proposed by Reynolds:

* Med. Transact. Vol. I. p. 311.

GEN. II. SPEC. II. Hæmorrhagia atonica. Atonic hemorrhage.

materials with great and unalloyed advantages in hemorrhages of most sorts, especially uterine, pulmonary, and nasal.*

Treatment, and since by Latham:

Dr. Latham† has since confirmed this practice of Dr. Reynolds in its fullest degree, and even extended its range; and so little inconvenience has he found from the use of the acetate that he has employed it "in doses of a grain three times a-day for six, eight, and ten weeks successively; usually, but not always, combining it with opium or conium; without any other precaution than desiring the patients to obviate any costiveness by oleum ricini or confectio sennæ." He has occasionally given two grains of the acetate as an evening dose; once, in consultation with Dr. Reynolds, five grains; and mentions another case in which he was concerned where ten grains a-day were taken without any inconvenience. By a mistake for sugar, a young woman, respecting whom he was consulted, swallowed at one time about two drachms of it, yet without any serious evil: the fauces and esophagus were considerably constringed, and this seems to have been the chief mischief; for the bowels were opened by oleum ricini and other purgatives in the course of the day, and the patient was not at all worse for the accident on the ensuing morning.

who has still further extended its use.

Emboldened by these facts, Dr. Latham has employed the same medicine in other diseases in which irritant astringents and tonics seem requisite, as in colliquative diarrhœas and hectic perspirations, and more especially in that semipurulent expectoration which too often terminates in pulmonary ulceration and consumption; and, as he confidently assures us, with great advantage. And he hence concludes that whatever deleterious properties may appertain to lead in some of its salts and oxydes, nothing pernicious exists in its acetate; in the process for which he conceives it either to be more completely

* Med. Transact. Vol. III. Art. XIII. † Vol. V. Art. XXI.

GEN. II. SPEC. II. Hæmorrhagia atonica.

freed from arsenical or other poisonous minerals than in its other forms, or rendered innocuous by the addition of the acetic acid.

Atonic hemorrhage. Treatment.

It only remains to be added that where entonic hemorrhage has occurred so profusely, or has continued so long as to reduce the system to an atonic state, it then becomes a disease of debility, and is to be treated as though originating under the present species.

GENUS III.

MARASMUS.

Emaciation.

GENERAL EXTENUATION OF THE BODY WITH DEBILITY.

Gen. III. Origin and use of the term in its ordinary scope.

MARASMUS is a Greek term, derived from μαραινω, "marcesco," "marcescere reddo." It was long ago used collectively to comprehend atrophy, tabes, and phthisis; and in employing it therefore in the present system as a generic name, we only restore it to its earlier sense. The generic character is common to all these subdivisions; for each is distinguished by a general emaciation of the frame accompanied with debility, and consequently forms a species to marasmus as a genus.

May be extended, and embrace two other species.

With these species, the reader, however, will now find two others united, M. ANHÆMIA, to which I shall advert presently, and M. CLIMATERICUS: the last from a high authority with which I fully coincide: and which is intended to embody that extraordinary decline of all the corporeal powers, which, before the system falls a prey to confirmed old age, sometimes makes its appearance in advanced life without any sufficiently ostensible cause, and is occasionally succeeded by a renovation of health and vigour, though it more generally precipitates the patient into the grave.

Extenuation or leanness how distinguished from emaciation.

Extenuation or leanness is not necessarily a disease; for many persons who are peculiarly lean are peculiarly healthy; while some there are who take pains to fall away in flesh that they may increase in health and become stronger. But if an individual grow weaker as he grows leaner, it affords a full proof that he is under a morbid influence; and it is this influence, this conjunction of extenuation with debility, as noticed in the definition, that is imported by the term MARASMUS, and its synonym EMACIATION.

GEN. III. Marasmus. Emaciation.

It is curious to observe how much more easily the body wastes under a disease of some organs than of others: and it would be a subject of no small moment to inquire into the cause of this, and to draw up a scale of organs effecting this change from the lowest to the highest degree. Dr. Pemberton, in a work of considerable merit, published many years ago, threw out some valuable hints upon this subject, which it is to be lamented that he did not afterwards follow up to a fuller extent. The following passage is well worthy of notice, and aptly illustrative of what is here intended. "Let us take," says he, "the two cases of a diseased state of the mesenteric glands, and a diseased or scrophulous affection of the breast. In the former we shall find there is a great emaciation; in the latter, none at all.—In an ulceration of the small intestines, great emaciation takes place; in scirrhus of the rectum, none.—In a disease of the gall bladder, which is subservient to the liver, the bulk of the body is diminished; but in a disease of the urinary bladder, which is subservient to the kidneys, scarcely any diminution of bulk is to be perceived. In an abscess of the liver, the body becomes much emaciated; but in an abscess of the kidneys, the bulk is not diminished.

Waste from diseases of some organs greater than from those of others; as peculiarly noticed by Pemberton.

Exemplification.

"If we examine into the function of those parts, the diseases of which do or do not occasion emaciation, we may perhaps be led to the true cause of this difference of their effect on the bulk. In order, however, to understand more clearly how the functions of these parts bear relation to each other, it may be necessary to premise that the glands of the body are divided into those which secrete a fluid from the blood for the use of the system, and those which secrete a fluid to be discharged from it. The former may be termined glands of supply; the latter glands of waste.

Causes of this difference explained.

Glands of supply what.

"The smaller intestines, in consideration of the great number of absorbents with which they are provided for the repair of the system, may be considered as performing the office of glands of supply. Large intestines, on the contrary, may be considered as performing the office of glands of waste: insomuch as they are furnished very scantily with absorbents, and abundantly with a set of

Glands of waste what.

glands which secrete or withdraw from the system a fluid which serves to lubricate the canal for the passage of the feces, and which itself, together with the feces, is destined to be discharged from the system. The glands which secrete a fluid to be employed in the system, as well as the glands of direct supply, may be considered the liver, the pancreas, the mesenteric glands, perhaps the stomach, and the small intestines; and the glands of waste are the kidneys, breast, exhalant arteries, and the larger intestines."

GEN. III. Marasmus. Emaciation.

The first set are, in fact, the general assemblage of the chylific organs; and it is upon their direct or indirect inability to carry into execution their proper function, that the first of the species we are now about to enter upon, that of ATROPHY, is founded in all its varieties. How far these remarks will apply to the other species of the present genus is not quite so clear. The seat of the third and fourth may be doubtful, perhaps variable; that of PHTHISIS, or the fifth, admits of no debate. Are the lungs to be regarded as an organ of waste or of supply? The question may be answered in opposite ways, according to the hypothesis adopted respecting the doctrine of respiration. They throw off carbonic acid gass. Do they introduce oxygene or any other vital gass into the circulating system? As an organ of waste, we cannot, upon the principle here laid down, account for the emaciation which flows from a diseased condition of them. If it can be substantiated that they are an organ of supply, they confirm and extend the principle. Will this principle, moreover, apply in dropsy, in which there is even more emaciation than in phthisis? The subject is worth enucleating; but we have not space for it, and must proceed to arrange the five species that appertain to the genus before us:—

This explanation how far applicable to the species before us: particularly to phthisis.

1.	MARASMUS ATROPHIA.	ATROPHY.
2.	———— ANHÆMIA.	EXSANGUINITY.
3.	———— CLIMACTERICUS.	DECAY OF NATURE.
4.	———— TABES.	DECLINE.
5.	———— PHTHISIS.	CONSUMPTION.

Most of these follow in regular order, as genera or spe-

GEN. III. Marasmus. Emaciation.

cies in most of the nosological arrangements, and are set down as subdivisions of macies or marasmus. By Dr. Cullen, phthisis is regarded as a mere sequel of hæmoptysis, upon which we shall have to observe in its proper place: while atrophia and tabes are given as distinct diseases under the ordinary head, only that for macies or marasmus he employs marcores as an ordinal term. The common distinguishing marks are, that atrophy is emaciation without hectic fever; tabes, emaciation with hectic fever; and phthisis, emaciation and hectic fever coupled with pulmonary disease. And such, with the exception of phthisis, is the distinction continued by Dr. Cullen in his Synopsis. But in his Practice of Physic he informs us that his views upon this subject had undergone a change, not only in respect to the subdivisions or varieties of these two diseases, but as to the diseases themselves. "I doubt," says he, "if ever the distinction of TABES and ATROPHIA, attempted in the Nosology, will properly apply; as I think there are certain diseases of the same nature, which sometimes appear with, and sometimes without fever."* This is written in the spirit of candour that so peculiarly characterizes this great man. But I cannot thus readily consent to relinquish a distinction which has received the sanction of so many observant pathologists, and which appears to me to have a sufficient foundation. It is difficult, undoubtedly, to assign a proper place to all the varieties, or subdivisions of these species; but this is a difficulty common to many other diseases equally; for we perceive fevers, nervous affections, and those of the digestive organs, perpetually running into each other in different varieties, while we find it convenient to arrange and describe them as distinct diseases notwithstanding. And, with the caution attempted to be exercised in respect to the species before us, I trust that the reader will not discern a greater transgression of boundary in the present than in various other cases of general allowance.

Arrangements of other nosologists.

Species how specifically distinguished.

Objection of Cullen; replied to.

* Vol. IV. Part III. Book I. Sect. MDCXVIII.

SPECIES I.

MARASMUS ATROPHIA.

Atrophy.

COMPLEXION PALE, OFTEN SQUALID: SKIN DRY AND WRINKLED: MUSCLES SHRUNK AND INELASTIC: LITTLE OR NO FEVER.

GEN. III. SPEC. I. Origin and meaning of the specific term.

THE specific is a Greek term deduced from α, privative, and τρεφω, "nutrio," and is literally, therefore, INNUTRITION: a designation peculiarly significant, as the disease in all its forms or varieties seems to be dependent on a defect in the quantity, quality, or application of the nutrient part of the blood: and thus lays a foundation for the three following varieties:

α Inopiæ. Atrophy of want.	**Blood innutritious from scarcity or pravity of food.**
β Profusionis. Atrophy of waste.	**Blood deprived of nutrition by profuse evacuations.**
γ Debilitatis. Atrophy of debility.	**Nutrition not sufficiently introduced into the blood by the chylific organs, or not sufficiently separated from it by the assimilating.**

α M. Atrophia inopiæ. Atrophy of want. Generic pathology.

In order that the body should maintain its proper strength and plumpness, it is necessary that the digestive organs should be supplied with a proportion of food adequate to the perpetual wear of its respective parts: for this wear, as we all know, produces a waste; and hence the emaciation sustained by those who suffer from famine, in which there is no food introduced into the stomach, or from a meagre or unwholesome diet, in which the quantity

GEN. III. SPEC. I. α M. Atrophia inopiæ. Atrophy of want.

introduced is below the ordinary demand. It is this condition that forms the first of the subdivisions or varieties, the ATROPHY OF WANT, under which the species before us is contemplated in the present arrangement.

β M. Atrophia profusionis. Atrophy of waste.

But the ordinary demand may not be sufficient for the body, or some part of it may be in a state of inordinate wear and waste, as in very severe and protracted labour, in which the supply is rapidly carried off by profuse perspiration, or in rupturing or puncturing a large artery, in which the same effect is produced by a profuse hemorrhage. Any other extreme or chronic evacuation may prove equally mischievous, as an excessive secretion from the bowels, from the vagina, from the salivary glands, from the breasts; as where a delicate wet-nurse suckles two strong infants. And hence the origin of the second of the above varieties, or the ATROPHY OF WASTE.

Pathological explanation continued.

Excessive expenditure supplied by proportional recruit.

Now, in all these cases, wherever the system is in possession of an ordinary portion of health, there is a strong effort made by the digestive powers to recruit the excessive expenditure by an additional elaboration of nutriment; and the instinctive effort runs through the entire chain of action to the utmost reach of the assimilating powers, or those secernents with which every organ is furnished to supply itself with a succession of like matter from the common pabulum of the blood. Hence the stomach is always in a state of hunger, as in the case of famine, profuse loss of blood, or recovery from fever; all the chylific organs secrete an unusual quantity of resolvent juices, an almost incredible quantity of food is demanded, and is chymified, chylified, and absorbed almost as soon as it enters the stomach; the heart beats quicker, the circulation is increased, and the new and unripe blood is hurried forward to the lungs, which more rapidly expand themselves for the purpose, to be completed by the process of ventilation: in which state it is as rapidly laid hold of by the assimilating powers of every organ it seems to fly to, and almost instantly converted into its own substance. Such is the wonderful sympathy that pervades the entire frame; and that runs

more particularly through that extensive chain of action which commences with the digestive and reaches to the assimilating organs, constituting its two extremities.

GEN. III. SPEC. I. β M. Atrophia profusionis.

So long as the surplus of supply is equal to the surplus of expenditure, no perceptible degree of waste ensues; but the greater the demand the greater the labour, and the turmoil is too violent to be long persevered in. The excited organs must have rest, or their action will by degrees become feeble and inefficient. And if this take place while the waste is still continuing, emaciation will be a necessary consequence even in the midst of the greatest abundance: and we hence obtain an explanation of the variety of emaciation before us, constituting the second.

Atrophy of waste.

While this continues there is no extenuation: when otherwise, the present variety is produced.

Thus far we have contemplated the animal frame in a firm and healthy constitution: and have supposed a general harmony of action pervading every link of the extensive chain of nutrition, from the digestive organs to the assimilating powers. But we do not always find it in this condition; and occasionally perceive, or think we perceive, that this necessary harmony is intercepted in some part or other of its tenour: that the digestive powers, or some of them, do not perform their trust as they should do, or that the assimilating powers, or some of them, exhibit a like default; or that the blood is not sufficiently elaborated in its course, or becomes loaded with some peculiar acrimony. And hence another cause, or rather an assemblage of other causes, competent to the disease before us.

Pathological explanation continued.

Illustration of the causes of atony from debility.

It is from the one or the other of these sources, that we are in most, perhaps in all, cases to derive the third modification of this disease, which is here distinguished, for want of a better term, by that of ATROPHY OF DEBILITY. The disease under this form is often very complex, and it is difficult to trace out what link in the great chain of action has first given way. Most probably, indeed, it is sometimes one link, and sometimes another. But from the sympathy which so strikingly pervades the whole, we see at once how easy it is for an unsoundness in one quarter to extend its influence to another, till the disease

γ M. Atrophia debilitatis.

Atrophy of debility.

This variety very complex.

Often extended from a point to the whole system.

GEN. III. SPEC. I. γ M. Atrophia debilitatis.

Atrophy of debility.

One extremity of a chain of organs peculiarly sympathetic with another.

Illustrated.

becomes general to the system. Yet I am much disposed to think that the atrophy so conspicuous in feeble habits, and the feeblest periods of life, as infancy and old age, commences most usually at the one or the other end of the chain, and immediately operates by sympathy on its opposite. This remark is in consonance with a very common law of life, by which impressions are more powerfully and more readily communicated from one extreme of an organ to another, than they are to any of the intermediate points. It is hence the will operates instantly on the fingers, the stomach on the capillaries of the skin; and that the irritation produced by a stone in the bladder is felt chiefly in the glans penis. And hence the close correspondence which we have already seen to prevail between these two extremities of the nutritive function in the case of want and hunger.

How the organs become primarily affected not always manifest.

Where atrophy is connected with a morbid state of the digestive organs, we have a little light thrown on the nature of the disease, but not much. For first, indigestion does not necessarily produce this effect, since it is no uncommon thing for dyspeptic patients to become plethoric, and gain, instead of lose, in bulk of body. And next, the morbid state of these organs may be a secondary instead of a primary affection, and be dependent upon a general hebetude, or some other unsound condition of the assimilating powers, constituting the other end of the chain; and hence exercising a stronger sympathy over them than over any intermediate organs whatever: as the digestive organs themselves, if the disease should have originated in them, may exercise a like sympathy over the assimilating powers, and hence produce that general extenuation, which, as we have just observed, is not a necessary consequence of dyspepsy. It is at least put, I think, beyond a doubt, that more than one set of organs are connected in the atrophy of debility.

Symptoms of infantile or puerile atrophy.

Where this atrophy takes place in infants at the breast or young children, it is ushered in by a flaccidity of the flesh, a paleness of the countenance, sometimes alternating with flushes, a bloated prominence of the belly, irregu-

larity of the bowels, pendulousness of the lower limbs, general sluggishness, and debility, and, where walking has been acquired, a disinclination to motion, with fretfulness in the day, and restlessness at night. GEN. III. SPEC. I. γ M. Atrophia debilitatis. Atrophy of debility.

There is at first no perceptible fever, no cough or difficulty of breathing: but if the disease continue, all these will appear as the result of general irritation, and the skin will become dry and heated, and be covered over with ecthyma, impetigo, or some other squalid eruption. The breath is generally offensive, the urine varies in colour and quantity; and in infants at the breast, the stools are often ash-coloured or lienteric, or greenish, loose, and griping. The appetite varies; in some cases it fails, in others it is insatiable.

Where these symptoms, or the greater part of them occur to an infant at the breast, it becomes us, in the first place, to be particularly attentive to the manner in which it has been nursed, in respect to cleanliness, purity of air, warmth, and exercise: we have next to turn our attention to the nurse's milk; and afterwards to an examination whether the infant is breeding teeth, or has worms, or there be any scrophulous taint in the blood. For the last we have no immediate remedy; the rest we must correct as we find occasion. And if we have no reason to be satisfied upon any of these points, it may still be advisable to change the milk. It is not easy to detect all the peculiarities of milk that may render it incapable of affording full nutrition: and there is reason to believe that one infant may pine away on what proves a healthy breast to another. I have given this advice in some dilemmas, and have often found a wonderful improvement on its being followed. In infancy the remote cause often doubtful.

In children on their feet, who are confined to the filth and suffocating air of a narrow cell, the common habitation of a crowding family, from Sunday morning to Saturday night; or who are pressed into the service of a large manufactory, and have learnt to become a part of its machinery before they have learnt their mother-tongue; there is no difficulty in accounting for the atro- In children often less doubtful.

GEN. III. SPEC. I. γ M. Atrophia debilitatis. Atrophy of debility.

phy that so often prevails amongst them. The appetite does not here so much fail as the general strength; their meals are, perhaps, doled out at the allotted hours by weight and measure; but still they are falling victims to emaciation; and are affording proof that air and exercise are of as much importance as food itself; that there are other organs than those of digestion upon which the emaciation must depend: and that, unless the supply furnished by the food to the blood-vessels be sufficiently oxygenized by ventilation, and coagulated by exercise, the blood itself, however pure from all incidental acrimony or hereditary taint, will never stimulate the secernents of the various organs to which it travels, to a proper separation of its constituent principles, and a conversion to their own substance.

Proximate cause may hence be reasonably conjectured in most cases.

In all these cases, therefore, the proximate cause seems to be lodged principally in the assimilating powers of the system; and whenever the digestive organs grow infirm also, it is rather by sympathy with the former than by any primary affection of their own.

Atrophia lateralis of Sauvages, what.

There is a singular case of atrophy quoted by Sauvages, to which he has given the name of *lateralis*, and which unquestionably belongs to this variety. It occurred in a young child, and took possession of just one half the body; the left side from the axilla to the heel being so completely wasted that the bones seemed only to be covered with skin, while the right side was fat. Under the influence of topical antispasmodics, and sudorifics continued *for seven years*, the writer of the account tells us that, he *began* to get better—"melius habere cœpit."*

Symptoms of atrophy in old age.

In the atrophy of debility common to old age, the cellular membrane, that is the part containing, as well as the parts contained, seems rather to shrivel away, in many cases to be carried away by absorption, and the muscular fibres to become dried up and rigid rather than loose and flabby. In this case the assimilating powers seem to have

* Nos. Med. Cl. x. Ord. i. Ex Collect. Acad. Tom. III. p. 693.

done their duty to the last, and like an empty stomach when loaded with gastric juice in a moment of sudden death, to have preyed upon and devoured themselves: since it is probable that nearly all the animal oil, and more than half the bulk of the muscles and of the parenchyma of many of the organs is carried off in the same manner; for that all these are capable of being converted into a like substance is clear, since all of them are transformable into adipocire by a chemical action after death, and into a steatomatous material by a morbid action of the living power, while every other organ continues in good health; and there are many facts that lead to the conclusion that all, under the circumstances before us, are capable of yielding a common substitute for the natural food of the system. Here, therefore, we are to look for the proximate cause of the disease towards the other end of the chain, or among the chylific viscera. And we shall not in general look in vain. Not, indeed, that we shall always, or even commonly, find it in the stomach or in the liver, for the appetite may not fail, though its demand is but small and is easily satisfied; and it probably digests what is introduced into it. Yet here the greater part of the food rests; or rather it passes through the intestines with very little into the lacteals; insomuch that many of our most celebrated anatomists have thought, as I have already had occasion to observe,* that the mesenteric glands of old people become obliterated; while Ruysch contended that mankind pass the latter part of their lives without lacteals, and that he himself was doing so at the time of writing.

GEN. III. SPEC. I. γ M. Atrophia debilitatis. Atrophy of debility. Proximate cause explained.

The mode of treatment needs not detain us. Where the disease depends upon a want of wholesome food, or of food of any kind, the cure is obvious: where upon profuse evacuations, it falls within the precincts of some other disease, and is to be governed by its remedies. And where the cause is an infirm condition of any part of the chain of nutritive functions, from the chylific to the assi-

General mode of treatment.

* Vol. I. p. 444. Parabysma Mesentericum.

GEN. III. SPEC. I. Marasmus Atrophia. Atrophy. Treatment.

milating organs, the same tonic course of medicine that may be adviseable in the one case, will be equally adviseable in the other. The bowels should be kept in a state of regularity; mercurial alterants may sometimes be required, though less frequently than under one or two varieties of tabes; the different preparations of iodine will often exercise a healthful stimulus, and prove the deobstruent that is stood in need of; the bitters and astringents enumerated under DYSPEPSY may also be had recourse to, according to the peculiarity of the case; and cleanliness, fresh air, exercise, and cold-bathing will complete the rest. The atrophy of old age is to be met by the richest foods, wine, and the warmth of another person sleeping in the same bed.

SPECIES II.

MARASMUS ANHÆMIA.

Ersanguinity.

FACE, LIPS, AND GENERAL SURFACE GHASTLY PALE; PULSE QUICK AND FEEBLE; APPETITE IMPAIRED; ALVINE EVACUATIONS IRREGULAR, BLACK AND FETID, OCCASIONALLY WITH SEVERE GRIPINGS: LANGUOR AND EMACIATION EXTREME.

GEN. III. SPEC. II. Anæmia incorrect for anhæmia.

THE specific name for this disease is sometimes written ANÆMIA, but incorrectly; for the aspirate ought to be retained, and is so indeed, in common usage, as in *anhæmous*, vulnerary or styptic, from the same root; *enharmonic; errhine; cachexy; amphemera; anthelmintic.* The most striking peculiarity of the affection is that the bloodlessness of the exterior precisely corresponds with that of the interior; since dissections show that the largest and

Striking feature of the disease:

deepest vessels are nearly as destitute of blood as those on the surface. It is in this ghastly pallor of the whole exterior as directly expressive of the same condition within that this disease chiefly differs from the atrophy of want, of waste, and of debility, which constitute the different modifications of the preceding species.

Gen. III. Spec. II. Marasmus Anhæmia. Exsanguinity. and by which it differs from atrophia.

The disease itself has often been referred to, and, at times, described, by the old writers, as Becher,* Albert,† and Janson ;‡ and still more lately by Hoffman, De Haen, and Isenflamm. Several of their cases, however, are confounded with the different forms of the preceding species, and consist of nothing more than an exhausted state of the blood-vessels from hemorrhage or other profuse evacuations, in one case, indeed, from hæmorrhoids.§ And hence, Lieutaud and Isenflamm undertook, in the middle of the last century, to distinguish the real disease from those which were thus confounded with it; tracing out the separate causes and symptoms, and marking them by different names; as anæmia *chlorosis*, and anæmia *consecutiva*, which were the appellations of Lieutaud ;‖ and a. *vera*, and a. *spuria*, which were those of Isenflamm. These distinctions, however, seem to have made less impression on the world of medicine than they ought to have done: for we find M. de Sauvages in the first edition of his Nosologia Methodica, published two years subsequently to Lieutaud's Summary, following Strach and Ramazzini, in describing anæmia, if, indeed, he has described it at all, as a modification of spurious chlorosis, or pallor, under the name of chlorosis *rhachialgica*.¶

Has been treated of formerly: but often imprecisely.

Attempts to remedy this.

Anæmia chlorosis and a. consecutiva of Lieutaud. A. vera and spuria of Isenflamm. Not attended to by Sauvages.

Chlorosis rhachialgica of Sauvages.

Of late years, however, something more of light, and far more of correct description, has been thrown upon

More accuracy of late years.

* Diss. Resolutio casûs practici Anæmiæ, Sanguinis miros fructus repræsentantis. Leid. 1663.

† Diss. De Anæmiâ. Hall. 1732.

‡ Diss. De Morbis ex Defectu Liquidi vitalis. Lugd. Bat. 1748.

§ Robin, Journ. de Médicine, Tom. XXXII. p. 48.

‖ Précis de la Médicine Pratique. 1761.

¶ Nos. Med. Cl. X. Cachexiæ. Ord. VI. Icteritiæ. Gen. XXXV.—Ramazz. De Morbis Artifici. Cl. I, II.

Gen. III. Spec. II. Marasmus Anhæmia. Exsanguinity. Halle. Combe.

this very extraordinary malady by the contributions of several writers, and particularly of Professor Halle, of Paris, and Dr. Combe, of Edinburgh. Nothing can be more different than the occupations, habits, and modes of life of two distinct classes of individuals who are hereby brought forward as the subjects of anhæmia. And yet the close resemblance, and, allowance being made for incidental circumstances, we may say the identity of the symptoms exhibited in situations so perfectly unlike, furnish an adequate proof of an identity of disease.

Illustrated from Combe.

The most strictly idiopathic example, and the one most free from influential incidents, is that of Dr. Combe.* The patient was forty-seven years of age; was born in the country; and for the most part had been occupied in agricultural employments; he was married, but without a family; was leading a regular and temperate life; had enjoyed perfect health ever since childhood, and had never been blooded. At the time of his applying to Dr. Combe for advice he had been unwell for about two months, or something more; his chief complaint having been loss of strength, uneasiness in the head, and a sickly complexion. "I was much struck," says Dr. Combe, "by his peculiar appearance. He exactly resembled a person just recovering from an attack of syncope. His face, lips, and the whole extent of the surface were of a deadly pale colour: the albuginea of his eye blueish: his motions and speech were languid: he complained much of weakness: his respiration, free when at rest, became hurried on the slightest exertion: pulse eighty and feeble: tongue covered with a dry fur: the inner part of the lips and fauces nearly as colourless as the surface." His bowels were very irregular though generally relaxed; the stools very dark and fetid; urine copious and pale; appetite impaired, and latterly a rejection of almost every kind of food; constant thirst; no pain referable to any part, nor any determinable derangement of structure.

Description of the disease.

Progress.

These symptoms continued with little variation for

* Case of Anæmia, Transact. of the Med.-Chir. Soc. of Edin. Vol. I. p. 194.

about three months, with the exception that, for a short time, he appeared to be improving. Yet upon the whole the disorder gained ground; the feeble pulse was easily excited; a copious perspiration followed upon any exertion; the veins on the arms and neck could be felt on making pressure, but the colour of the blood did not appear through the skin. At one time an affection of the liver was suspected; at another, from the thirst and great flow of urine paruria *mellita;* but none of these indications were stationary. Tonics did no service, nor a sea-voyage which was tried, nor the use of a chalybeate spring. He grew gradually weaker, continued to lose flesh, but, with a strong resemblance to the delusive confidence of phthisis, his spirits remained for the most part undepressed, and he still looked forward to a speedy recovery. Meanwhile all the symptoms were deteriorating, and the constitution was evidently sinking under their pressure. In about six months from the period of his application for relief the edema extended over his face and upper extremities, evident marks presented themselves of effusion into the chest, and he died with all the symptoms of hydrothorax.

GEN. III. SPEC. II. Marasmus. Anhæmia. Exsanguinity. Fatal termination.

The body was examined thirty-six hours after death. The waxy pallor of the surface remained unchanged: the subcutaneous fat was scanty, of a pale yellow, and semi-fluid. Not a drop of blood escaped on dividing the scalp: the dura mater was pale, presented few vessels, and those empty. The pia mater was equally pale, its blood-vessels contained a pale serum and a considerable quantity of air. The lateral sinuses were moderately filled with a pale fluid blood; the arteries at the basis were empty. The substance of the brain was very soft and pultaceous, mapped with very few vessels. The lungs were of a pale gray, without any marks of gravitated blood. The heart when cut into was of a pale colour, and did not tinge the linen when rubbed upon it; it appeared like flesh macerated many days in water. The right ventricle contained a pale coagulum. The left side was wholly empty. The coronary arteries were sound.

Post-obit examination. Bloodless viscera. Viscera pale. Arteries empty

GEN III. SPEC. II. Marasmus Anhæmia. Exsanguinity.

The inner coat of the aorta was of a fine red colour for some inches, without any turgescence or ossification. All the valves were sound. A considerable moisture bedewed the viscera of the abdomen. The liver was of its proper size and structure, but of a light brown colour; there was no exudation of blood on cutting into its substance. The spleen was the only viscus of its usual colour: it was very soft, and its contents, when pressed, turned out as from a sac. The kidneys were nearly bloodless: the pancreas of a pale reddish hue. The stomach and intestines were perfectly sound, thin, showing no vessels, and transparent. The muscular substance throughout the body, was, like that of the heart, very pale and exuded no blood, but only a pale serum when cut into. The arteries were universally empty, as were also the jugular, humeral, and femoral veins. The lower cava alone, about the bifurcation, with the exception of the lateral sinuses, contained any appreciable quantity of blood.

Heart empty.

Veins empty.

Accumulated serum of the thorax.

Ossification in the dura mater.

Besides these appearances about three pounds of a lemon-coloured serum was found effused in the thorax, and a considerable ossification, about an inch long, rough and irregular, was traced imbedded in the plicæ of the dura mater near the vertex, being almost the only morbid deviations, with the exception of those that relate to the sanguineous system; the first of which Dr. Combe justly regards as a mere consequence of the disease; while he thinks it may admit of a doubt whether the second had any connexion with the bloodless state of the system. In truth it seems to have been an incidental concomitant.

The first in consequence of the disease: the second an incidental growth.

Almost total exhaustion of blood:

It is impossible to conceive of a more total exhaustion of the vital fluid from the entire system than this singular case presents to us; and instead of wondering at the deadly waxiness of the complexion, the feebleness of the pulse, the utter debility and emaciation which this incarnate ghost must have presented, the greater and almost the only wonder is how the living principle could so long have remained attached to so exhausted a receiver, and the sensorial fluid have derived its means of recruit; at a time, too, when all the functions, in the midst of their fee-

and the tenacity of the living principle wonderful.

bleness, were urged on by the force of the morbid excitement to the performance of double duty: the pulse was quickened, the animal spirits maintained above the standard of sober health; the peristaltic action, though irregular, for the most part accelerated, the perspiration redundant, and the urine often profuse.

GEN. III. SPEC. II. Marasmus Anhæmia. Exsanguinity.

The post-obit examination, while it unveils little or nothing of the proximate cause of the disease, discloses to us most manifestly the inroad that had been made upon the general substance of the frame for the want of a due supply of nourishment, and how completely every organ had been living upon itself, and the whole had been living upon the remnant of the blood almost to its last drop. The fault does not, therefore, so much seem to have been in the secernent system, or assimilating powers, as in the lacteals or digestive function; in the commencement rather than in the termination of the chain.

Inroad made upon the general substance of the frame.

Fault chiefly in the lacteals or digestive function.

It was the opinion of Ruysch, as we have lately had occasion to observe, that this commencing part of the catenated organ of supply gradually loses its power with the advance of years, and that in old age it entirely ceases to act: so that being himself, at the time of writing, in this very season of life, he conceived he was then living, and had been living, for a long period, upon himself: upon such nourishment as the fat, blood, flesh, parenchyma, and even brain can produce when melted down by the action of the absorbents. And he farther conceived that, from the little wear and tear which usually takes place in old age, the flame of life might be kept burning for a considerable term by the fuel hereby supplied; the growing emaciation being a pretty correct measure of the material consumed.

Opinion of Ruysch.

How far such may have been the fact with Ruysch himself, or with any other person in the ordinary advance of life, we need not at present examine: but something very like it appears to have occurred in the very extraordinary malady before us. We have seen that the digestive function was habitually impaired, and that at length,

How applied to the present facts.

GEN. III. SPEC. II. Marasmus Anhæmia. Exsanguinity.

food of all kinds was rejected from the stomach; and we shall find by other instances presently, that the stomach, under the influence of this disease, seems to be always, even at its best estate, capricious or fastidious. But the lacteals seem to have participated in the same infirmity; and to have laboured under an atony or paresis so considerable, though invisible to the eye of the anatomist, as to have transmitted whatever aliment might have been subacted very imperfectly, or not at all, into the course of the circulation. And hence, while the blood actually in existence was perpetually drained off in support of the different organs and their respective functions, a small quantity only of an unelaborated fluid was able to reach the heart and larger arteries, which were, in consequence, pale and empty, or only partially supplied with a thin, watery, and scarcely tinged liquid. And, in confirmation of this idea, we shall find in the sequel of our examination that the mesentery, in various instances, gives proof of disturbance, and appears enlarged even to an external examination, while the hypochondria are free from such affection.

Hence proximate cause brought to light. Exciting cause still more obscure.

Such then seems to have been the proximate cause, though undeveloped by dissection, if we may be allowed to hazard a conjecture upon a subject involved in so much obscurity. Yet the exciting cause seems still more effectually to elude our penetration: for the constitution of the individual seems to have been strong and hearty, and every thing in his situation, occupation, and habits of life apparently concurred in promising him a long continuance of health.

Yet this sometimes penetrable.

In various cases of the disease, however, that have occurred, we have some degree of insight into the occasional as well as into the proximate cause. And I now particularly allude to the endemic appearance of this complaint at Anzain near Valenciennes, as described by Professor Halle in M. Corvisart's Journal.*

* Journ. de Médicine, Chirurg. Pharm. &c. Par MM. Corvisart, Leroux, et Boyer. Tom. IX. p. 3. Paris Ann. XIII. See a Translation of this in the Edinb. Journ. Vol. III. p. 170.

At Anzain is a large coal-mine reaching to two or three adjoining villages. It was in one of the galleries of this mine that the complaint made its appearance, and to this it was confined, though no difference had hitherto been detected between the contaminated gallery and the rest. It is of the same depth, being a hundred and twenty fathoms from the level ground, and excavated in the same manner, but is longer and hence does not so readily admit of an efflux of pure air. Its temperature is 64° Fahrenheit, it exhales an odour of sulphuretted hydrogen gas, which renders respiration difficult. Some caustic mineral, perhaps some metallic salt, appears to be dissolved in the water that drips from the mine, as it produces blains or blisters on any part of the body to which it is applied. Yet the water has been occasionally drunk to allay thirst, and the mine had been worked for eleven years without any such complaint as that before us: and it is, hence, obvious that some new combination of vapour, incapable of detection by the senses, had found vent into the atmosphere of the gallery; or some new mineral substance had become dissolved in its percolating water; which had a direct power of loosening and destroying the tone of the restorative system, at the commencement of its chain.

GEN. III. SPEC. II. Marasmus Anhæmia. Exsanguinity. Existence of the disease at Anzain. Description of the mine in the gallery where it occurred.

The symptoms in their general features, were strikingly similar to those we have just described; and seem only to have been modified by the peculiarity of the exciting cause, being often, though by no means always, accompanied from the first with severe gripings, and more violent affection of the abdominal viscera, and hence more rapid in their progress. Dr. Combe is inclined to think from these symptoms that this disease was not a strict idiopathic anhæmia, but a modification of rhachialgia, the colic of lead or arsenic, and that it is hence more nearly allied to the chlorosis *rhachialgica* of Sauvages than to the anhæmia *Chlorosis* of Lieutaud. But in no instance do I find the back-bone ache, or spine-ache, from which rhachialgia derives its name and by which, together with an extension of this aching over the upper and sometimes the lower extremities, with a strong tendency to pa-

Symptoms as already described. Sometimes accompanied with severe gripings. Hence suspected by some to be a rhachialgia: but erroneously.

GEN. III. SPEC. II. Marasmus Anhæmia. Exsanguinity. Gripings incidental.

ralysis, it is specifically distinguished. Neither indeed is the colicky pain itself to be regarded as a pathognomic sign, or necessary attendant: for of the four patients who were sent for examination and treatment from Anzain to Paris, while two suffered from it, the other two were without any such symptom. Nor did the treatment usually found most serviceable in rhachialgia prove of much, if indeed of any, benefit in the Anhæmia of Anzain; so that the medical superintendants who had at first embraced this idea, found themselves obliged to abandon such a course and the view of the disease on which it was founded, and to regard it as a direct exemplification of idiopathic anhæmia.

Fifty patients at one time,

and the number daily increasing.

At the time of opening their correspondence with the School of Medicine at Paris, fifty patients, all belonging to the same gallery, had been attacked with the disorder, three of whom had died, and the number of patients was almost daily increasing, notwithstanding that the gallery was at this time shut up. Some of the sufferers had been ill for fifteen, others for twelve, others for eight months: and many were recent cases. It was obvious, however, that those were the most unfortunate subjects, and exhibited the highest degree of severity who had been attacked while actually employed in the gallery: while those who did not complain till it was closed, passed through it, not indeed with speed, but in a more favourable way. So that the disorder seemed capable of being divided into two distinct states or varieties, an acute and a chronic.

An acute and chronic state of the disease.

General symptoms.

The general symptoms under the former, independently of those of colic, were pallor of skin, great emaciation, weak, feeble, quick, contracted pulse, palpitations of the heart, anhelation, extreme debility so as to render walking difficult; bloated countenance, habitual perspiration, especially at night; stools black or greenish. These symptoms often continued without much change for many months, sometimes for upwards of a year; when they were united, manifestly from augmented weakness, with head-ache, frequent faintings, intolerance of light and sound.

Where colic was an accompaniment there was much griping pain in the stomach and intestines, inflation of the abdomen, and at times, towards the close, purulent stools. GEN. III. SPEC. II. Marasmus Anhæmia. Exsanguinity. Occasional colic.

Four patients were selected out of the aggregate body to be sent to the School of Medicine at Paris for examination and advice. They were all young; their ages being from sixteen to twenty-one: one of them had worked in the mine for six years, the others for ten or eleven; and as they had all been ill for nearly a twelvemonth, it is obvious that they had been attacked while labouring in the gallery; and were hence regarded as having received the complaint in its acute state. Four patients selected for trial, and sent to Paris.

We have already observed that of these four two had experienced colicky pains from the first, and two had not been troubled with them. The pulse varied from seventy to a hundred and four strokes in a minute, but the stroke was extremely feeble and scarcely perceptible; the least excitement, moreover, would accelerate it almost beyond the power of counting. Diagnostic history.

The stomach appears to have been generally capricious; they could relish food if allowed to exercise a choice; but one of them was subject to frequent vomiting; and in all the digestion was manifestly imperfect, as the food was partially discharged with little change, intermixed with black or greenish feces. The mesentery, as we have already observed, seemed considerably enlarged to the touch, but was destitute of pain on pressure: nor did the enlargement extend to any other region.

So extreme was the weakness that none of these patients were able to walk more than a few steps without palpitation of the heart, and being compelled to sit down, and especially on mounting a stair-case. Yet the same delusive hope, the same eparsis or mental elation that often accompanies consumption, and appeared, as we have already observed in Dr. Combe's patient, was generally conspicuous in the cases before us. Even the death of one of them did not seem to destroy this enviable feeling. "We were afraid," says Professor Halle, "lest the me- Weakness extreme: Still accompanied with delusive hope.

GEN. III. SPEC. II. Marasmus Anhæmia. Exsanguinity.

lancholy fate of the first patient should have had an influence on the minds of his companions; but we had here no difficulty to encounter. The hope that the opening of his body would put us upon a more successful mode of treatment, predominated in their minds, without taking away their regret for his loss." It is thus we sometimes meet with a few cordial drops intermixed with the bitterest cup of suffering, and enabling the patient to support his trial not only with composure but with an elevated spirit.

Fatal case.

The individual who thus fell a sacrifice seems to have been attacked with more than ordinary severity at the very onset of the disease: and was one of those who had to contend with the pains of colic in addition to the specific symptoms. Mercurial inunction was early tried, but abandoned in a few days from its being found to augment the pulse and increase the tendency to fever. When he reached Paris he had been ill for eleven months, having previously been employed in the mine for a period of eight years. He at length gave manifest proofs of hectic fever, the remissions of which became gradually shorter, till at length the fever assumed a continued type. But though the skin was burning hot it did not lose its paleness, nor was the slightest blush discernible on the tongue, the lips, or the conjunctiva: a remark which is indeed equally applicable to all the rest. He seems to have sunk under the pressure of debility alone, his most prominent symptoms at last being those of great difficulty of breathing, a feeble and intermitting pulse, and cold extremities.

Appearances on dissection as already given.

The appearances on dissection were, as nearly as may be, those of Dr. Combe's patient, as we have already described them. The parenchymatous viscera were all pale, diminished and shrivelled, with the exception of the heart, which preserved its natural size. Even the spleen which, in the preceding case, retained its proper colour, and does not seem to have had its size much interfered with, was here of a reduced magnitude, and of the same spongy softness which the preceding case disclosed.

Bloodlessness the predominant feature.

The almost utter bloodlessness of all the vessels, how-

ever, formed the predominant feature. "In the three cavities all the vessels, as well arteries as veins, were destitute of coloured blood, and contained only a small quantity of serous fluid. No blood was found in the aorta, as far as its crural sub-divisions, nor in the accompanying veins, nor in the system of the hepatic vessels, nor in any of the sinuses of the brain. Upon making a deep incision into the flesh of the thighs there flowed out a small quantity of liquid and black blood, but from no other part whatever. The flesh of the muscles which cover the thorax was exceedingly red, but that of the extremities much less so. And we are told that the same destitution of blood which distinguished this case, occurred also in all the other dissections that were made at any time: so that the want of colour in the interior precisely corresponded with that of the surface, and of the whole capillary system. "This condition therefore," observes M. Halle, "may be regarded as peculiarly dependent on the disease; as exhibiting itself by manifest signs during its entire progress; and as reaching its height when it is on the point of terminating, and has reached its last stage." GEN. III. SPEC. II. Marasmus Anhæmia. Exsanguinity.

From the extensive spread of the malady there was a pretty ample opportunity of putting various plans of treatment to an effective test; and the opportunity was not neglected. Modes of treatment.

Mercury, as we have already observed, did not seem to answer. Two cases recovered under its use; but in general it produced febrile excitement, and hence no credit was given to it even in the instances of restoration. Mercury.

Emetics, sudorifics, acids, sedatives, tonics, and stimulants were all tried simultaneously, or in succession. But by far the most successful, as, indeed, the most rational plan, and that most corresponding with the nature of the proximate cause we have endeavoured to illustrate, consisted in a combined employment of the two last of these classes, stimulant and tonic medicines, with a free use of opium where the tormina required it, and the employment of gentle laxatives on the return of constipation. The Emetics, sudorifics, acids, sedatives, tonics, stimulants. The two last classes in combination most successful.

GEN. III. SPEC. II. Marasmus Anhæmia. Exsanguinity. Camphor and ether, bark and iron. Diet.

best stimulants appear to have been camphor and ether; the best tonics, bark and iron. While this plan was continued the patients generally improved in strength, lost their palpitation on walking, and evinced a slight return of colour; and in every instance in which this process was discontinued at too early a period, they appear to have relapsed; and only to have renewed their advantage upon a return to the same treatment. The diet was generous and nutritious as it ought to be, and altogether harmonized with the pharmaceutic intention.

SPECIES III.

MARASMUS CLIMACTERICUS.

Decay of Nature. Climacteric Disease.

GENERAL DECLINE OF BULK AND STRENGTH, WITH OCCASIONAL RENOVATION, AT THE AGE OF SENESCENCE, WITHOUT ANY MANIFEST CAUSE.

GEN. III. SPEC. III. Groundwork derived from Sir H. Halford: and the species new to nosological classification.

FOR the ground-work of this species of marasmus I am entirely indebted to Sir Henry Halford's elegant and perspicuous description of it in the Medical Transactions. The disease has hitherto never appeared in any nosological arrangement, but it has characters sufficiently distinct and striking for a separate species. In several of its features it bears a strong resemblance to the marasmus or atrophy of old age described under the first species; but it differs essentially in the instances which it affords of a complete rally and recovery: and, if the train of reasoning about to be employed in developing its physiology prove correct, it will be found to differ also in its chief seat and proximate cause.

Pathology.

The ordinary duration of life seems to have undergone little or no change from the Mosaic age, in which, as in the

present day, it varied from threescore and ten to fourscore years. In passing through this term, however, we meet with particular epochs at which the body is peculiarly affected, and suffers a considerable alteration. These epochs the Greek physiologists contemplated as five; and, from the word climax (κλιμαξ), which signifies a gradation, they denominated them climacterics. They begin with the seventh year, which forms the first climacteric; and are afterwards regulated by a multiplication of the figures three, seven, and nine, into each other; as, the twenty-first year being the result of three times seven; the forty-ninth, produced by seven times seven; the sixty-third, or nine times seven; and the eighty-first, or nine times nine. A more perfect scale might perhaps have been laid down; but the general principle is well-founded; and it is not worth while to correct it. The two last were called grand climacterics, or climacterics emphatically so denominated, as being those in which the life of man was supposed to have consummated itself; and beyond which nothing is to be accomplished but a preparation for the grave.

GEN. III. SPEC. III. Marasmus climactericus. Decay of nature. Climacteric disease. Climacterics of the Greek pathologists. Grand climacterics.

With the changes that occur on or about the first three of these periods we have no concern at present; and shall hence proceed to that which frequently strikes our attention as taking place about the fourth, or in the interval between the fourth and fifth. This change is of two distinct and opposite kinds; and it is necessary to notice each.

We sometimes find the system at the period before us exhibiting all of a sudden a very extraordinary renovation of powers. The author has seen persons who have been deaf for twenty years abruptly recover their hearing, so as in some cases to hear very acutely: he has seen others as abruptly recover their sight, and throw away their spectacles, which had been in habitual employment for as long a period; and he has also seen others return to the process of dentition, and reproduce a smaller or larger number of teeth to supply vacuities progressively produced in earlier life. Under the genus ODONTIA, in the first class and first order of the present system, several of

Sudden renovation of power occasionally found in advanced life.

GEN. III. SPEC. III. Marasmus climactericus. Decay of nature. Climacteric disease.

these singular facts have been already noticed, and examples given of entire sets of teeth cut at this period. That the hair should evince a similar regeneration, of which instances are also adduced in the same place, and of which Forestus affords other examples,* is perhaps less surprising; since this has been known to grow again, and even to change its colour after death.† But I have occasionally seen several of these singularities, and especially the renewal of the sight and hearing, or of the sight and teeth, occur simultaneously. And hence Glanville spoke correctly when he affirmed that "the restoration of grey hairs to juvenility, and renewing exhausted marrow, may be effected without a miracle."

Sometimes an equally sudden decline without any manifest cause.

On the other hand, instead of a renovation of powers at the period before us, we sometimes perceive as sudden and extraordinary a decline. We behold a man apparently in good health, without any perceptible cause, abruptly sinking into a general decay. His strength, his spirits, his appetite, his sleep, fail equally; his flesh falls away; and his constitution appears to be breaking up. In many instances this is perhaps the real fact; and no human wisdom or vigilance can save him from the tomb. But in many instances also it is an actual disease, in which medical aid and kindly attention may be of essential service; and upon an application of which we behold the powers of life, as in other diseases, rally; the general strength return; the flesh grow fuller and firmer, the complexion brighten; the muscles become once more broad and elastic; and the whole occasionally succeeded by some of those extraordinary renovations of lost powers or even lost organs to which I have just adverted.

Subject obscure and difficult.

The subject is obscure; and it is as difficult perhaps to account for either of these extremes—for the sudden and unexpected decline, as for the sudden and singular restoration. That the decline however is a real malady, and not a natural or constitutional decay, is perfectly obvious from the recovery. And hence Sir Henry Halford, in

* Lib. XXXI. Obs. 6. † Eph. Nat. Cur. passim.

reference to the period in which it occurs, and by which, no doubt, it is influenced, has emphatically denominated it the CLIMACTERIC DISEASE. GEN. II. SPEC. III. Marasmus climactericus.

Under the first species the author observed that the great chain of the organs of nutrition extends from the chylific viscera to the assimilating secernents; that these form the ends of the chain; that a powerful sympathetic action runs through the whole: but that this action is more powerful between the one end of the chain and the other, than between any of its intermediate links. He observed further that in the atrophy of old age the failure of action seems to commence and to be chiefly seated at the chylific or chyliferous end, and that the assimilating secernents exhibit the same failure only afterwards and by sympathy: that the lacteals become generally, and sometimes altogether obliterated, while the assimilating process is supported by an absorption, first of the animal oil deposited in the cellular membrane, then of this membrane itself, and, lastly, of much of the muscular and parenchymatous structure of the general frame. In the disease before us the reverse of all this seems to take place; and for its origin we must look to the assimilating powers constituting the other end of the chain. The patient falls away in flesh and strength before he complains of any loss of appetite, or has any dyspeptic symptoms; which only appear to take place afterwards by sympathy. And that the mesentery and lacteals are not paralyzed and obliterated, as in the atrophy of old age, is incontrovertible from the renovation of power and reproduction of bulk that form an occasional termination of the disease.

Decay of nature. Climacteric disease. Explanation of the chief seat and proximate cause of the disease.

In watching carefully the symptoms of this malady, when totally unconnected with any concomitant source of irritation either mental or bodily, we shall often perceive that it creeps on so gradually and insensibly that the patient himself is hardly aware of its commencement. "He perceives," to adopt the language of Sir Henry Halford, "that he is tired sooner than usual, and that he is thinner than he was; but yet he has nothing mate-

Description.

GEN. III. SPEC. III. Marasmus climacteri-cus.

rial to complain of. In process of time his appetite becomes seriously impaired; his nights are sleepless, or, if he get asleep, he is not refreshed by it. His face becomes visibly extenuated, or perhaps acquires a bloated look. His tongue is white, and he suspects that he has fever. If he ask advice, his pulse is found quicker than it should be, and he acknowledges that he has felt pains in his head and chest; and that his legs are disposed to swell; yet there is no deficiency in the quantity of his urine, nor any other sensible failure in the action of the abdominal viscera, except that the bowels are more sluggish than they used to be."

Decay of nature. Climacteric disease.

Sometimes he feels pains shooting over different parts of the body, conceived to be rheumatic, but without the proper character of rheumatism; and sometimes the headache is accompanied with vertigo. Towards the close of the disease, when it terminates fatally, the stomach seems to loose all its powers; the frame becomes more and more emaciated; the cellular membrane in the lower limbs is laden with fluid; there is an insurmountable restlessness by day, and a total want of sleep at night; the mind grows torpid and indifferent to what formerly interested it; and the patient sinks at last; seeming rather to cease to live, than to die of a mortal distemper.

Rarely appears in a simple form;

Such is the ordinary course of this disorder in its simplest form when it proves fatal; and the powers of the constitution are incapable of coping with its influence. Yet it is seldom that we can have an opportunity of observing it in the simple form, and never, perhaps, but in a patient whose previous life has been entirely healthy, and whose mind is unruffled by anxiety. For if this complaint, whatever be its cause, should show itself in a person who is already a prey to grief, or care, or mental distress of any kind, or in whom some one or more of the larger and more important organs of the body, as the liver, the lungs, or the heart, has been weakened or otherwise injured by accident or irregularity, or is influenced by a gouty or other morbid diathesis, the symptoms will assume a mixed character, and the disease be greatly ag-

but mostly connected with other affections:

which often chiefly aggravate it: and render it fatal.

gravated. It is these accidents indeed, that for the most part constitute the exciting cause, as well as the most fearful auxiliary of the disease; for, without such, it is highly probable that the predisposition might remain dormant; and that many a patient who falls a sacrifice to it would be enabled to glide quietly through the sequestered vale of age to the remotest limit of natural life, and at length quit the scene around him without any violent struggle or protracted suffering, with an euthanasia sometimes, though rarely, attained, but ardently desired by us all.

GEN. III. SPEC. III. Marasmus climactericus. Decay of nature. Climacteric disease.

Sir Henry Halford has remarked, that the disease, according to his experience, is less common to women than to men. The author's own experience coincides with this observation. And we can be at no loss to account for the difference, when we reflect on the greater exposure of the latter than of the former to those contingencies which so frequently become occasional causes or auxiliaries, and which, at the period now alluded to, strike deeper and produce a much more lasting effect than in the heigh-day and ebulliency of life.

Disease more common to men than women. Explanation.

There are some events, however, that apply equally to both sexes, and which very frequently lead to this affection; and that is, the loss of a long tried and confidential friend; of a beloved or only child; or of a wife or husband assimilated to each other in habits, disposition, general views and sentiments, by an intercourse of perhaps thirty or forty years' standing. This last, as it has occurred to me, is a more marked and more frequent cause of excitement than any other. I have seen it in some instances operate very rapidly: and have my eye at this moment directed to the melancholy fate of a very excellent clergyman, between fifty and sixty years of age, the father of ten children, who were all dependent upon him, and whose benefice would have enabled him, in all probability, to provide for them respectably, had he lived; but who, having lost the beloved mother of his family while lying in of her tenth living child, was never able

Common causes of excitement. Illustrated.

GEN. III. SPEC. III. Marasmus climactericus.

to recover from the blow, and followed her to the grave in less than three months.

Decay of nature. Climacteric disease.

I have at other times seen the same effect produced as clearly and decidedly, though with a much tardier step, and unaccompanied with any sudden shock. I attended not long since a lady in the Edgeware Road, who died of a consumption at the age of fifty-four. Her husband, though not a man of keen sensibility, had attentively nursed her through the whole of her lingering illness, and had lived happily with her from an early period of life. He was aware of her approaching end, and prepared for it: and, in a few weeks after her decease, seemed to have recovered his usual serenity. Not long afterwards, however, he applied to me on his own account. I found him dispirited, and losing flesh; his appetite was diminishing, and his nights restless, with little fever, and altogether without any manifest local disorder. The emaciation with its accompanying evils nevertheless increased, the general disease became confirmed, and in about five months he fell a sacrifice to it.

Further illustrated.

Occasional cause sometimes very slight.

Occasionally, however, where the climacteric temperament, if I may so express myself, is lurking, a very trivial accidental excitement proves sufficient to rouse it into action. "I have known," says Sir Henry Halford, "an act of intemperance, where intemperance was not habitual, the first apparent cause of it. A fall, which did not appear of consequence at the moment, and which would not have been so at any other time, has sometimes jarred the frame into this disordered action. A marriage contracted late in life has also afforded the first occasion to this change."

Explained by a striking example.

It has in some instances followed upon a cutaneous eruption, of which the following case will afford a very striking example, and show in the clearest colours the general want of tone which under this morbid influence prevails throughout the system.

Most of my readers of this metropolis have heard of, and many of them have perhaps had the pleasure of being

personally acquainted with the late James Cobb, Esq. Secretary to the East India Company, the history of whose life, from his intimate and extensive connexion and correspondence with the most brilliant and distinguished characters of the age that have figured either in political or fashionable life, and more especially from his own fine taste and commanding talents, and his unweared efforts to patronize merit in whatever rank it was to be found, ought not to have been withheld from the world. In November 1816, this gentleman, then in his sixty-first year, and blessed with one of the firmest and most vigorous constitutions that I have ever known, applied to me for an erysipelatous affection of the face. It was troublesome, and for nearly a fortnight accompanied with a slight fever, and a good deal of irritation. It subsided at length, but left a degree of debility which called for a change of air, and relaxation from public duty. He made a short excursion to France, and returned much improved, but evidently not quite restored to all the strength and elasticity he formerly enjoyed. Insensibly, and without any ostensible cause, he became emaciated, walked from Russell Square to the East India House with less freedom than usual, and found his carriage a relief to him in returning home. His appetite diminished, his nights were less quiet, and his pulse a little quickened. At one time he complained of an inextinguishable thirst, and voided an unusual quantity of urine, so as to excite some apprehension of paruria *mellita*. But the urine evinced no sweetness, and both these symptoms rapidly disappeared under the medical treatment laid down for him. The general waste and debility, however, continued to increase; his natural cheerfulness began to flag occasionally, and exertion was a weariness. At this period an inflammation commenced suddenly on the left side of the nates, which soon produced a tumour somewhat larger than a goose's egg, and suppurated very kindly. Sir Gilbert Blane and Sir Walter Farquhar were now engaged in consultation with myself, as was Dr. Hooper afterwards. It was a doubtful question what would be the result of this abscess?

GEN. III. SPEC. III. Marasmus climacterius. Decay of nature. Climacteric disease.

Gradual and desultory progress of the disease.

Apparent but ineffectual metastasis.

GEN. III. SPEC. III. Marasmus climactericus.

Decay of nature. Climacteric disease.

It might be regarded as an effort of nature to re-invigorate the system by a critical excitement; and in this view of the case there was reason for congratulation. But it was at the same time obvious that if the strength of the system should not be found equal to this new source of exhaustion, and could not be stimulated to meet it, the abscess might prove highly unfavourable. The tumour was opened, and about a quarter of a pint of well-formed pus discharged: but the morbid symptoms remained without alteration, and the cavity seemed rather disposed to run into a sinus along the perinæum than to fill up. The opening was enlarged, but no advantage followed: it was evident there was too little vigour in the system to excite healthy action. The abscess was alternately stimulated with tincture of myrrh, a solution of nitrate of silver, and red precipitate; but the surface continued glassy with a display of pale and flabby granulations that vanished soon after they made their appearance. Mr. Cline was now united in consultation, and concurred in opinion that the wound was of subordinate importance, and would follow the fortune of the general frame. The issue was still doubtful, for the constitution resisted pertinaciously, though upon the whole the disorder was gaining ground. Yet even at this time there was not a single organ we could pitch upon, with the exception of the abscess, that gave indication of the slightest structural disease. The lungs were perfectly sound and unaffected; the heart without palpitation; the mind in the fullest possession of all its powers; the head at all times free from pain or stupor, even after very large doses of opium and other narcotics; the bile was duly secreted; the urine in sufficient abundance; and the bladder capable of retaining it without inconvenience through the whole night. The pulse, however, was quick, the stomach fastidious, and the bowels irregular, sometimes costive, and at others suddenly attacked with a diarrhœa that required instant and active attention to prevent a fatal deliquium. The wound continued on a balance: there was energy enough to prevent gangrene, but too little for incarnation.

Disease gradually advances.

A clearer example of the disease before us cannot be wished for or conceived. Unfortunately, its progress, though retarded by the arms of medicine, was retarded alone. One of the last recommendations was a removal into the country: but Mr. Cobb was now become so debilitated and infirm, that this was found a work of some difficulty, and required contrivance. His Royal Highness the Duke of Sussex, however, being kind enough to accommodate our patient with the use of his easy and convenient sofa-carriage, for as long a period as he might choose, he proceeded without much fatigue to a house provided for him on the borders of Windsor Forest. The distance was now become too considerable for me to attend him statedly, and I visited him but once or twice afterwards. He continued, however, to decline gradually, and, in about a month from the time of his going to Windsor, sunk suddenly under a return of the diarrhœa.

GEN. III. SPEC. III. Marasmus climactericus. Decay of nature. Climacteric disease. Fatal termination.

In the progress of this disease medicine will generally be found to accomplish but little. The constitutional debility must be met by tonics, cordials, and a generous diet: and a scrupulous attention should be paid to such contingencies of body or mind, as may form an exciting cause, or aggravate the morbid diathesis if already in a state of activity. Congestions must be removed where they exist, and every organ have room for the little play that the rigidity of advanced life allows to it: and where aperients are necessary, they should consist principally of the warm and bitter roots or resins, as rhubarb, guaiacum, and spike-aloes. In many instances the Bath water, and in a few that of Cheltenham, will be also found of collateral use: and especially where we have reason to hope that a beneficial impression has been made on the disease, and that the system is about to recover itself.

General medical treatment.

The last remark I shall beg leave to offer, I must give in the words of Sir Henry Halford himself. If not strictly medical, it is of more than medical importance; and I have very great pleasure in seeing it put forth from so high an authority, and finding its way into a professional volume. "For the rest," says he, "the patient

Advantage of a patient's being able to minister to himself.

GEN. III. SPEC. III. Marasmus climactericus. Decay of nature. Climacteric disease.

must minister to himself. To be able to contemplate with complacency either issue of a disorder which the great Author of our being may, in his kindness, have intended as a warning to us to prepare for a better existence, is of prodigious advantage to recovery, as well as to comfort; and the retrospect of a well-spent life is a cordial of infinitely more efficacy than all the resources of the medical art."

SPECIES IV.

MARASMUS TABES.

Decline.

GENERAL LANGUOR; DEPRESSION OF STRENGTH, AND, MOSTLY, OF SPIRITS; HECTIC FEVER.

GEN. III. SPEC. IV. Origin of the specific terms not hitherto clearly explained.

TABES is a Latin term of doubtful origin. The lexicographers derive it from the Greek τηκω, "macero," varied in the Doric dialect to ταχω,—whence Scaliger makes a compound of ταχοβιος, "macerans vita," "a consuming life, or life of consumption;" and supposes that such a word existed formerly, and that tabes is a derivative from it. This is ingenious, but nothing more. *Tab-eo*, or *tab-es*, is most probably derived from the Hebrew תאב (tab), literally "to pine away or consume;" which is the exact meaning of the Latin terms.

How distinguished from the other species of the genus.

Tabes is sufficiently distinguished from atrophy by the presence of hectic fever; from climacteric decay, by the tendency to depressed spirits, as well as its appearing at any age; and from consumption, by the local symptoms of the latter.

Its ordinary causes are commonly supposed to be an acrimony in the blood from an absorption of pus, or the

introduction of some poisonous substance, as quicksilver or arsenic; or a scrophulous taint; or an irritation produced by excess in libidinous indulgences: thus laying a ground-work for the four following varieties. Gen. III. Spec. IV. Marasmus Tabes. Decline.

α Purulenta.	Purulent decline.
β Venenata.	Decline from poison.
γ Strumosa.	Scrophulous decline.
δ Dorsalis.	Decline of intemperance.

In the FIRST OF THESE VARIETIES the absorbed pus may be contemplated as acting the part of a foreign and irritating substance,* and as acting upon a peculiarity of constitution: but unless the latter be present, pus will rarely, if ever, be found to produce a tabid frame: for, as already observed under hectic fever, if absorbed pus be capable, independently of idiosyncrasy, of inducing a decline in one instance, it ought to do so in every instance; yet this we know is not the case, since buboes, empyemas, and other apostems and abscesses of large extent, have been removed by absorption, and yet no tabes has accompanied the process. It is said to occur more frequently where an abscess or a vomica is open; in consequence of pus becoming more acrimonious by the action of the air. But this supposition is altogether gratuitous: and where hectic fever accompanies a sore or open abscess, it is more probably from increased irritation on the edges or internal surface of the cavity, as already observed when treating on psoas abscess. α M. Tabes purulenta. Purulent decline.

In TABES VENENATA, Dr. Cullen conceives that one cause of emaciation is produced by an absorption of oil from the cells of the cellular membrane into the blood, for the purpose of inviscating the acrimonious spiculæ of the poisonous substance. This may perhaps be true in some instances: but by far the greater number of poisons that enter the blood, whether by deglutition or inhalation, act by a chemical rather than by a mechanical power. Let them, however, act as they may, the hypothesis is β M. Tabes venenata. Decline from poison.

* Armstrong, Diss. de Tabe Purulentâ. Edin. 1732.—Lentilius, Jatromnemata, p. 384. Stuttg. 1712. 8vo.

GEN. III. SPEC. IV. β M Tabes venenata. Decline from poison.

not necessary to account for the emaciation: for the acrimony with which the blood is hereby contaminated, is alone sufficient to excite and maintain the hectic; as the hectic is alone sufficient to wear away the strength and substance of the system, and produces the waste. It is a disease, as Scheffler has observed, chiefly common to miners and mineralogists:* and, next to these, is to be found, perhaps, most frequently among the labourers in chemical laboratories.

There are other poisonous irritants which are altogether ingenerate or hereditary, that, by their perpetual stimulation, ultimately produce the same effect; as those of chronic syphilis, cancer, and scurvy.

γ M. Tabes strumosa. Strumous or mesenteric decline.

A more common cause, however, than any of these, is to be found in a state of the system which has apparently a very near relation to that of scrophula, though it is difficult precisely to identify them. The VARIETY FROM THIS CAUSE is, hence, frequently treated of under the head of scrophula or struma; but as it is peculiarly connected with a morbid condition of one or more of the organs of nutrition, including those of digestion and assimilation, and is uniformly accompanied with emaciation, irritation, and some degree of hectic fever, it more properly falls within the range of the genus MARASMUS than that of STRUMA, and constitutes a peculiar variety of DECLINE.

Different stages of morbid hereditary diatheses.

Of all the contaminations that lurk in the blood, and are propagable in a dormant state, that of scrophula, consisting, as for the present we must allow it to do, in the acrimony before us, shows itself sooner than any of the rest. It is curious, indeed, to observe the different periods of time that hereditary diatheses of a morbid kind demand for their maturity, unless quickened into developement by some incidental cause. Scrophula very generally shows itself in infancy; phthisis, rarely till at the age of puberty; gout, in mature life; mania, some years later; and cancer still later than mania. Scrophula runs its

* Von der Gesundheit der Bergleute. Chemnitz. 1770.

course first, and becomes dormant, though rarely extinct; phthisis travels through a term of fifteen or twenty years, and if it do not destroy its victim by the age of thirty-eight, generally consents to a truce, and is sometimes completely subjugated. All the rest persevere throughout the journey of life: they may indeed hide their heads for a longer or shorter interval, but they commonly continue their harassings till the close of the scene.

GEN. III. SPEC. IV. γ. M. Tabes strumosa. Strumous or mesenteric decline.

When the strumous taint is excited into action in infant life, it generally fixes itself upon the chylific or chyliferous glands, especially when they are in a weakly state; most commonly upon the mesentery, and to this quarter it often confines itself; insomuch that "I have frequently," says Dr. Cullen, "found the case occurring in persons who did not show any external appearance of scrophula; but in whom the mesenteric obstruction was afterwards discovered by dissection."* It is supposed by Dr. Cullen, and by most pathologists, that the emaciation is, in this case, produced invariably by an obstruction of the conglobate or lymphatic glands of the mesentery, through which the chyle must necessarily pass to the thoracic duct. That an obstruction thus total may occur, is not to be altogether disputed, because the lymph has been found stagnated in its course by such an obstruction of lymphatic glands in other parts: but I have already observed that it is an interruption of very rare occurrence:† so rare that Mr. Cruikshank affirms he never saw such a stagnation on the dissection of any mesenteric case whatever. And that a scrophulous enlargement of the glands of the mesentery does not necessarily produce a total obstruction, is certain, because children, in whom mesenteric enlargement can be felt in the form of knots protuberating in the abdomen, have lived for a considerable number of years, sometimes ten or twelve, and have at last died of some other disease. And hence, it is perhaps more frequently the hectic fever kept up by the local irritation of

Scrophulous taint in infancy chiefly manifested in the mesenteric glands.

Disease produced by obstruction.

Cullen's explanation;

not satisfactory.

Probably produced by irritation and hectic.

* Pract. of Phys. Part III. Book I. § MDCVI.

† Vol. I. p. 445. Cl. I. Ord. II. Parabysma *Mesentericum*.

GEN. III. SPEC. IV. ? M. Tabes strumosa. Strumous or mesenteric decline.

the mesentery, and the general acrimony of the scrophulous taint in the blood, that produces the emaciation in this case, than the pressure of a scrophulous infarction.

Description.

"The mesenteric decline," says Dr. Young, "is generally preceded by more or less of a head-ache, languor, and want of appetite. It is more immediately distinguished by acute pain in the back and loins, by fulness, and, as the disease advances, pain and tenderness of the abdomen. These symptoms are accompanied or succeeded by a chalky appearance, and want of consistency in the alvine evacuations, as if the chyle were rejected by the absorbents, and left in the form of a milky fluid in the intestines; and the functions of the liver were at the same time impaired, the natural tinge of the bile being wanting. The evacuations are also sometimes mixed with mucus and blood; and are attended by pain, irritation, and tenesmus, somewhat resembling those that occur in a true dysentery. Occasionally, also, there are symptoms of dropsy, and especially of ascites; as if the absorption of the fluid, poured into the cavity of the abdomen, were prevented by local obstacles: the absorbent glands, which are enlarged, being rendered impervious, and pressing also on the lacteals and lymphatics which enter them and pass by them." The appetite is generally good and often ravenous; probably produced by some remote irritation acting sympathetically on the stomach; as that of the mesentery, or more likely that of the assimilating powers that constitute the opposite end of the chain of nutrient organs, and which, from their morbid excitement, produce a morbid waste, and demand a larger supply than they receive. As worms are easily generated, and multiply in the digestive organs when in a state of debility, they have often been found in a considerable number in this disease, and have sometimes been mistaken for the cause of the malady instead of the effect.* Balme gives a case in which they were equally discharged by the mouth and anus.† In the strumous enlargements are occasionally

Worms often found as an effect, and sometimes mistaken for a cause.

* Chesneau, Lib. v. Obs. 27. † Journ. de Méd. 1790. Sept. N. 1.

found calcareous concretions, such as often appear in the joints when weakened by arthritic affections,* or in other weak organs: and hence similar concretions are sometimes discovered in the lacteals and the liver.† Where the irritation or inflammation is considerable, the intestinal canal is peculiarly apt to unite in the morbid action, producing, with many of the symptoms we have just noticed, hectic fever, and forming what has often been called the FEBRIS INFANTUM REMITTENS.

GEN. III. SPEC. IV. γ M. Tabes strumosa. Strumous or mesenteric decline.

The decline from an intemperate indulgence in libidinous pleasures has been denominated TABES DORSALIS, from the weakness which it introduces into the back, or rather into the loins. It is a disease of considerable antiquity; for we find traces of it in the oldest historical records that have reached our own day: and it is particularly described by Hippocrates under the name of ΦΘΙΣΙΣ ΝΩΤΙΑΣ,‡ literally "HUMID TABES," from the frequent and involuntary secretion of a gleety matter, or rather of a dilute and imperfect seminal fluid. He explains it to be, as a disorder of the spinal marrow, incident to persons of a salacious disposition, or who are newly married, and have too largely indulged in conjugal pleasures. He represents the patient as complaining of a sense of formication or a feeling like that of ants creeping from the upper part of his body, as his head, into the spine of his back; and tells us that when he discharges his urine or excrements there is at the same time a copious evacuation of semen, in consequence of which he is incapable of propagating his species, or answering the purpose of marriage. He is generally short breathed and weak, especially after exercise: he is sensible of a weight in his head, his memory is inconstant, and he is affected with a failure of sight and a ringing in his ears. Though without fever at first, he at length becomes severely fe-

δ M. Tabes dorsalis. Decline of intemperance.

Described by the oldest writers.

Description of Hippocrates.

* Douin, Journ. des Sçavans, 1690.—Monro, Med. Trans. II. Art. 18.

† Histoire de l'Academie des Sciences, &c. 1684.

‡ Περι των εθνεος Παθων. Opp. p. 539. as also Περι Νουσων, II. Opp. p. 479.

GEN. III. SPEC. IV. ♂ M. Tabes dorsalis. Decline of intemperance.

verish, and dies of that variety of remittent which the Greeks called leipyria, a sort of causus or ardent fever attended with great coldness of the extremities, but with a burning fire and intolerable heat within, an insupportable anxiety and unconquerable driness of the tongue. This description is fully confirmed by Professor Frank in his history of the miserable condition of two young men who had induced the same disease by a habit of self-pollution, one of whom, together with extreme emaciation, suffered excruciating pains in every limb from head to foot, was incapable of standing, and subject to epileptic fits; while the other, after a long career of acute suffering in various ways, was at length seized with a hemiplegia.*

Confirmed by Frank.

From this sketch it is obvious that the disease is one of great danger, though it is occasionally combatted with success. In the Hôpital des Enfans Malades at Paris, the fatal cases are calculated by M. Guersent, one of the physicians to the establishment, at from five to six in every hundred of boys, and from seven to eight in every hundred of girls, whose names enter into the tables of mortality.† Upon the treatment we shall offer a few remarks towards the close of the species.

Waste of seminal fluid not a cause as conjectured by Cullen:

Dr. Cullen does not think that the quantity of seminal fluid discharged by undue indulgence can ever be so considerable as to account for this general deficiency of fluids in the body, and the debility that accompanies it, and adds that we must therefore seek for another explanation of these evils. "And whether," says he, "the effects of this evacuation may be accounted for either from the quality of the fluid evacuated, or from the singularly enervating pleasure attending the evacuation, or from the evacuation's taking off the tension of parts, the tension of which has a singular power in supporting the tension and vigour of the whole body, I cannot positively

* De Cur. Hom. Morb. Epit. Tom. v. p. 259.

† Dict. de Médicine. Art. Carreau.

determine; but I apprehend that upon one or other of these suppositions the emaciation attending the tabes dorsalis must be accounted for."*

GEN. III. SPEC. IV. ♂ M. Tabes dorsalis. Decline of intemperance.

It is not difficult to trace this result in a less doubtful and more direct way. The sexual organs, both in males or females, have a close and striking sympathy with the organ of the brain; and the fluid they secrete with the nervous fluid. Whence Willis conceived that the fluids of both organs are the same, and hence expressly accounts for the debility.† Morbid salacity is no uncommon cause of madness, as we shall have occasion to observe hereafter. Irritation of the uterus shortly after child-birth, is a still more frequent cause of the same mental affection. The testes are not capable of secreting their proper fluid till the sensorial organ has acquired, or is on the point of acquiring, maturity, so that both become perfect nearly at the same time; the mere apprehension of failure when in the act of embracing has at once, in a variety of instances, unnerved the orgasm, and prevented the seminal flow so effectually that the unhappy individual has often required many weeks or even months before he could recover a sufficient confidence to render the operation complete; while, as Dr. Cullen has correctly observed, the evacuation itself, even when conducted naturally, produces a pleasure of a singularly enervating kind. It is in truth a shock that thrills through all the senses; and hence in persons of an epileptic temperament, has been known, as we shall have occasion to observe more fully hereafter, to bring on a paroxysm while in the act of interunion.

but explicable in a more direct way. Sexual organs closely sympathize with the brain.

It is hence easy to see that an immoderate excitement of the generic organs, and secretion of seminal fluid must weaken the sensorial powers even at their fountain; and consequently that the nervous and muscular fibres throughout the entire frame, and even the mind itself must be influenced by the debility of the sensorium.

Hence sensorial power weakened by immoderate indulgence

* Pract. of Phys. Part III. B. I. § MDCX.

† Pharm. Rationalis de Medicament. Operat. Pars 2. 1675.

GEN. III. SPEC. IV. ♂ M. Tabes dorsalis. Decline of intemperance.

This we might suppose if there were no chronic flux from the seminal vessels. But when we consider the effect often produced on the general frame by the discharge, or rather the irritation of a single blister; or, which is perhaps more to the purpose, of a small seton or issue, we can be at no loss to account for all the evils that haunt the worn-out debauchee, and especially the self-abuser, from involuntary emissions of a seminal fluid however dilute and spiritless, in connection with the dreadful debility we have just noticed, and which is the cause of this emission. The nervous irritation which results from this debility is the source of the hectic by which the miserable being is devoured: and hence the heavy terrors and insupportable anxiety, corporeal as well as mental, the sense of formication and other phantasms, the flaccidity of the back and loins, the withering of the entire body, the constant desire of erection with an utter inability of accomplishing it, which haunt him by day and by night, and throw him into a state of despondency. A fearful picture, which cannot be too frequently before the eyes of a young man in this licentious metropolis in order to deter him from plunging into evils to which he is so often exposed.*

and particularly by chronic and involuntary emission.

Exemplified.

Even where sexual inability has not taken place, the system, by an habitual excess of libidinous indulgence, is not unfrequently roused and kept up to such a state of excitement as to produce hectic fever, and great debility, or other derangement of the spinal cord. Of this we shall hereafter have to give a most appalling example† in a young debauchee, who, at the age of forty-five, fell a sacrifice chiefly to this enervating propensity, after refusing to take the warning that a constitution, naturally feeble and rhachetic, was well calculated to offer; but which might by care and prudent nursing have held out to the ordinary term of old age. The upper limbs were, for years

* Lewis's Essay upon the Tabes Dorsalis. Lond. 1758.—Brendal, Diss. de Tabe Dorsali. Goett. 1748.—Swediaur, Vol. I. p. 231. Spermacrasia Asthenica.

† See Paraplegia, Vol. IV. Cl. IV. Ord. IV. Gen. VIII. Spec. VI.

before his death, motionless and rigid; and the spinal marrow, through a considerable portion of its length, was found disorganized and liquescent.

GEN. III. SPEC. IV. Marasmus Tabes. Decline.

Much of the medical treatment it may be proper to pursue has been anticipated in several of the preceding species.

General medical treatment.

The first variety, in which the decline is dependent on the stimulus of an abscess or sore, or the introduction of pus into the circulation, can only be cured by a cure of the local affection. The strength may in the mean while be supported by a course of inirritant tonics, as cinchona and the mineral acids, nutritious diet, gentle exercise and pure air. And, if stimulants be at any time employed with a view of acting more directly on the morbid irritation and changing its nature, they should be limited to the milder resins, as myrrh, or the milder terebinthinates, as camphor, and balsam of copaiba.

Treatment of purulent decline.

In decline from the inhalation of metallic or other acrimonious vapours, if Dr. Cullen's hypothesis were established, that the emaciation is a mere result of the vis medicatrix naturæ, and produced by an absorption of oil from the cellular membrane for the purpose of sheathing the minute goads of the poison, it would be our duty to follow up this indication and employ inviscating demulcents, both oils and mucilages. But this practice has rarely been productive of any success: and we have much more reason to expect benefit from a use of the alkalies, which, by uniting with the metallic salts, if they still exist in the circulation, may disengage their acid principle, reduce the metallic base to a harmless regulus, and, by the new combination hereby produced, form a cooling, perhaps a sedative neutral. The first step, however, is to remove the patient from the deleterious scene to an atmosphere of fresh air, then to purify the blood, whether we employ the alkalies or not, with alterant diluents, as the decoction of sarsaparilla, and afterwards to have recourse to bitters, astringents, and the chalybeate mineral waters.

Treatment of decline from poisonous inhalations.

In strumous decline, the mode of treatment should run precisely parallel with that for most of the species of PA-

Treatment of strumous decline.

GEN. III. SPEC. IV. Marasmus Tabes. Decline. Treatment.

RABYSMA, OR VISCERAL TURGESCENCE, already laid down under their respective heads, and particularly with that for mesenteric parabysma, to which the reader may turn.*

Treatment of decline from intemperate indulgence.

In the treatment of tabes *dorsalis*, or decline from intemperate indulgence, our attention must be directed to the mind as well as to the body; for it is a mixed complaint, and each suffers equally. A summer's excursion with a cheerful and steady friend, into some untried and picturesque country, where the beauty and novelty of the surrounding scenery may by degrees attract the eye, and afford food for conversation, will be the most effectual step to be pursued if the symptoms be not very severe. The hours should be regular, with early rising in the morning, the diet light, nutritive, and invigorating, and a little wine may be allowed after dinner; since it will almost always be found that the patient has too freely indulged in wine formerly; and he must be let down to the proper point of abstinence by degrees.† The metallic tonics will commonly be found of more use than the vegetable, with the exception of iron, which is generally too heating: though the chalybeate waters may be drunk, if sufficiently combined with neutral salts. The local cold bath of a bidet should be used from the first, and afterwards bathing in the open sea.

If the disease have made such an inroad on the constitution that travelling cannot be accomplished; if the mind be overwhelmed, the back perpetually harassed with pain and feebleness, and the nights sleepless with hectic sweats and a frequent involuntary discharge, two grains of opium, or more if needful, should be taken constantly on going to bed; diluted acids, vegetable or mineral, should form the usual beverage, and a caustic be applied to the loins on each side. Hippocrates recommends the actual cautery, and that it should descend on each side of the back, from the neck to the sacrum. Savine-bougies have been

* Vol. I. p. 444. Cl. I. Ord. II.

† See Wichmann, De Pollutione Diurnâ, frequentiori, sed rarius observatâ. Tabescentiæ causâ. Goett. 1782.

prescribed by some writers as a topical stimulus; but a bidet of cold water is preferable; with injections of zinc or copper, at first not rendered very astringent, but gradually increased in power.

GEN. III. SPEC. IV. Marasmus Tabes. Decline. Treatment.

SPECIES V.

MARASMUS PHTHISIS.

Consumption.

COUGH: PAIN OR UNEASINESS IN THE CHEST, CHIEFLY ON DECUMBITURE: HECTIC FEVER: DELUSIVE HOPE OF RECOVERY.

GEN. III. SPEC. V. Arrangement and subdivisions of Cullen

CONSUMPTION, or PHTHISIC as it is sometimes called by old medical writers, is by Dr. Cullen contemplated as nothing more than a sequel of hæmoptysis, instead of being regarded as an idiopathic affection; and his species, which are two, can only be viewed, and so appear to have been by Dr. Cullen himself, as separate stages in the progress of the complaint; his first species being denominated phthisis *incipiens*, and characterized by an absence of purulent expectoration; and his second, phthisis *confirmata*, distinguished by the presence of this last symptom.

unsatisfactory: but resulting from the shackles of his classification.

This, however, is a very unsatisfactory, as well as a very unscientific view of the subject, and evidently betrays the trammels of Dr. Cullen's classification; since he seems only to have placed the disease in this position because he could find no other to receive it: for he admits in his First Lines that "phthisis arises also from other causes besides hæmoptysis."* It is highly probable, indeed, that phthisis occurs, or at least commences, more frequently without hemorrhage from the lungs than with it,

Hæmoptysis rather a sequel than a cause of phthisis.

* Part I. Book IV. Ch. I. Sect. DCCCLII.

GEN. III. SPEC. V. Marasmus Phthisis. Consumption.

and consequently that hæmoptysis ought much rather to be regarded as a symptom or sequel of phthisis, than phthisis of hæmoptysis.

"Hæmoptysis," observes Dr. Young, in a work that has the rare advantage of combining great research and learning, comprehensive judgement, and a study of the present disease in his own person, "is usually enumerated among the exciting, or even among the more remote causes of consumption; but in a healthy constitution, hæmoptysis is not materially formidable; and it is conjectured that when it appears to produce consumption it has itself been occasioned by an incipient obstruction of a different kind."* So that, on a concurrence of the two, we may commonly adopt the opinion of Desault, and call it an hæmoptysis from consumption, rather than a consumption from hæmoptysis.†

Of the three varieties we are about to describe, we shall find hæmoptysis a frequent cause of the second, but rarely of either of the others. These varieties I have taken from Dr. Duncan's very valuable "Observations" on consumption: they are evidently drawn from a close and practical attention to the disease, and are as follow:

α Catarrhalis.	Catarrhal consumption.
β Apostematosa.	Apostematous consumption.
γ Tubercularis.	Tubercular consumption.

α Distinctive signs of M. Phthisis catarrhalis, or catarrhal consumption.

In the FIRST VARIETY, the cough is frequent and violent, with a copious excretion of a thin, offensive, purulent mucus, rarely mixed with blood; generally soreness in the chest, and transitory pains shifting from side to side. It is chiefly produced by catching cold, or the neglect of a common catarrh.‡

β Distinctive signs of M. Phthisis apostematosa, or apostematous consumption.

In the APOSTEMATOUS VARIETY, the cough returns in fits but is dry: there is a fixed, obtuse, circumscribed pain in the chest, sometimes pulsatory; with a strikingly

* Treatise on Consumptive Diseases, p. 45.

† Sur les Maladies Vénériennes, la Rage, et la Phthisie, &c. 12 Bord. 1733.

‡ Histoire des Phlegmasies ou Inflammations Chroniques, fondée sur les Nouvelles Observations de Clinique, et d'Anatomie Pathologique, &c. Par F. J. V. Broussais, Doct. en Med. &c. Tom. I. Paris, 1808.

difficult decumbiture on one side; the dry cough at length terminates in a sudden and copious discharge of purulent matter, occasionally threatening suffocation; the other symptoms being temporarily, in a few rare instances perhaps permanently, relieved. When hæmoptysis is the cause, the disease generally appears under this form. GEN. III. SPEC. V. Marasmus Phthisis. Consumption.

In the TUBERCULAR VARIETY, the cough is short and tickling; and there is an excretion of the watery, whey-like sanies, sometimes tinged with blood; the pain in the chest is slight; and there is mostly an habitual elevation of spirits. Usually the result of a scrophulous diathesis. γ Distinctive signs of M. Phthisis tuberecularis, or Tubercular Consumption.

In Dr. Duncan's observations, consumption or phthisis is introduced as a genus, and consequently the varieties now offered as so many species; yet as the tubercular may run into the apostematous variety, and the catarrhal into both, according to the peculiarity of the constitution, and other concurrent circumstances, and more especially as a common cause may produce all of them in different idiosyncrasies, the present subdivision will perhaps be found the most correct.

Dr. Wilson Philip, has formed another variety (with him species) of consumption, to which he has given the name of *Dyspeptic Phthisis*, and which he supposes to be produced by a previously diseased state of the digestive organs in which the lungs ultimately participate. "Drunkards," says he, "at that time of life which disposes to phthisis, frequently fall a sacrifice to this form of the disease; and those who have been long subject to severe attacks of dyspepsia, and what are called bilious complaints, are liable to it.—What is the nature of the relation observed between the affection of the lungs, and that of the digestive organs in this species of phthisis? is the one a consequence of the other, or are they simultaneous affections, arising from a common cause? they are not simultaneous affections, for the one always precedes the other. In by far the majority of cases in which both the lungs and digestive organs are affected, the affection of the digestive organ precedes that of the lungs. In some instances, we find the affection of the lungs the primary Dyspeptic phthisis of Philip, what.

GEN. III. SPEC. V. Marasmus Phthisis. Consumption.

disease: but in these the case does not assume the form above described, but that of simple phthisis; and the hepatic affection, which is always the most prominent feature of this derangement in the digestive organs, does not show itself till a late period of the disease, and then little, if at all, influences the essential symptoms."*

These remarks show clearly that dyspeptic phthisis is a sequel of a prior disorder, rather than an idiopathic affection; and, as such, needs not be pursued further in describing the present species. If it outlast the primary malady, or this disease, as is sometimes the case, is converted into it, the digestive organs recovering health, and the lungs appearing to concentrate the morbid action in themselves, it is then reduced to a case of simple or idiopathic phthisis of the one or the other of the varieties now offered.

It would however be tedious and of no practical use, to notice the different ramifications into which consumption has been followed up by many of the most approved pathologists that have touched upon it. Among modern writers, more especially, it has been very unnecessarily subdivided: thus Bayle gives us six species, derived from supposed organic causes;† of most of which we can know nothing till the death of the patient; Portal fourteen,‡ the first two of which, the scrophulous and plethoric, are peculiarly entitled to attention, while the rest are drawn from other diseases with which it is often complicated, or of which it is a sequel. In Morton and Sauvages the divisions and subdivisions are almost innumerable. The Greek pathologists are not chargeable with the same error; for in general they treat of the disease, under two branches alone, phthisis and phthoe; the first importing abscess of the lungs, or the apostematous variety of the present classification, and the second ulceration of the lungs, embracing

Subdivisions of Bayle:

of Portal:

of Morton and Sauvages:

Phthisis and phthoe of the Greeks.

* Trans. of Medico-Chirurg. Soc. Vol. VII. p. 499.

† Recherches sur la Phthisie Pulmonaire. Par. 1810.

‡ Observations sur la Nature et le Traitement de la Phthisie Pulmonaire, 2 tom. 8vo. Paris. 1809.

perhaps the greater part of the other two. The terms are those of Hippocrates, and they are thus interpreted by Aretæus.*

GEN. III. SPEC. V. Marasmus Phthisis. Consumption.

Of the varieties here noticed, by far the most frequent is the TUBERCULAR; concerning which it is necessary to offer an explanation, as the term TUBERCLE has been used in very different senses by different writers, and as the morbid change it imports has been derived from very different sources.

Tubercular variety by far most frequent.

The term considered etymologically is a diminutive of *tuber*, a bump or knot of any kind; in the present work PHYMA;† and has hence been conveniently applied to minute prominences generally: though, when accompanied with inflammation, they are usually called papulæ or pimples, and when filled with a limpid fluid, vesicles: and if the vesicles, or rather the vesicular cysts, be supposed to possess an independent, or animalcular life, hydatids.

Meaning of the term explained. Tuber: phyma: papulæ: vesicles: hydatids.

There is not an organ of the body but is capable, as well in its substance as its parenchyma, of producing tubercles of some kind or other; and occasionally of almost every kind at the same time; for Bonet, Boerhaave and De Haen, as well as innumerable writers in our own day, have given striking examples of clusters of cystic tubers, or enlarged tubercles, of every diversity of size existing both in the abdomen and in the thorax, formed in the interior of their respective viscera, or issuing from the surface of their serous membranes, some of which are filled with a limpid fluid, others with a gelatinous, a mucous, or a puriform; and others again with a cheesy, pulpy, or steatomatous mass: in some instances indeed sarcomatous; though wherever a morbid growth of this last kind exists, it is for the most part firmly and directly connected with the organ which gives rise to it without the intervention of a cyst.

Tubercles found in every organ, and of every kind.

Tubercles therefore, as well in their effect as in their minuteness of size, may be regarded as the seeds of by far the greater number of tuberosities, unaccompanied with inflammation, that exist in the body; and it is not improbable that even a certain degree of inflammation itself is

Tubercles probably favoured by some degree of inflammation.

* Morb. Chron. I. 10.

† See Vol. II. p. 334.

GEN. III. SPEC. V. Marasmus Phthisis. Consumption.

often favourable to their growth and general spread. In their origin they seem to be single cysts, or often perhaps single follicles, but as they enlarge, the interior is at times divided by reticulations of vessels, or membranous bands or distinct cells, thus exhibiting almost every variety of the animal structure; while the external tunic usually becomes stouter, sometimes duplicate, and at times cartilaginous.

Rise from a single cyst or follicle.

Progress towards enlargement.

If we suppose a single follicle of a serous membrane, as that of the lungs for instance, to become gorged or obstructed by a contained fluid, some degree of increased action will immediately take place from the distention hereby produced; a fresh supply of fluid will be forced into it, and its walls will either burst or become enlarged from, perhaps, the diameter of a pin's point to that of a pea, the *grandines* of Wesser, or any magnitude beyond.

Now what is this power, or in what does it reside, that thus enlarges the walls of that most simple of all animal structures the follicle of a serous or mucous membrane, or builds up the walls of a cyst, where no such utercle is ready made? To resolve this question we must recollect that all the fluids of supply, while circulating in the animal system, possess a principle of vitality from the chyle itself to the ejected semen, as has been sufficiently shown by Mr. Hunter; while many of them have a tendency to run into, or rather instinctively to elaborate organized forms. This is particularly the case with the coagulating part of the blood, and especially, as Sir Everard Home has shown, when it possesses an intercourse with the red particles, and there is reason to believe that this is the case also with other fluids, besides the coagulating lymph, of which the vital action of the impregnated egg furnishes us with a clear and impressive example: for we here find vascularity, muscular and nervous fibres, instinct, and sensation produced from a pulpy fluid that but a few days before had none of these properties, and which in the mean while has had nothing communicated to it but the animal heat of the sitting hen, or the culinary heat of an oven, either of which will answer equally.

Healthy organized forms produced and maintained by the law of instinct;

uniformly operating to definite ends.

Now under the code of healthy action all this vital power,

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as we have formerly had occasion to observe,* is directed to definite or instinctive ends, instinct being nothing more than the law of simple life, whether in animals or plants, in a state of operation, and directed to a given effect. But where the instinctive power or the law of health has no existence, the tendency to organization must produce the most anomalous, and oftentimes the most marvellous results: and hence the existence of monster-growths at times in every organ of the body; of which the most curious, as well as the most illustrative of the doctrine before us, are those abortive attempts at the production of single organs or structures, as a tooth, a lock of hair, a fleshy mole, or polype, an imperfect finger, a vesicle or bladder, a mass of imperfect brain (one of the most common of such productions), a ball of fat or suet, and sometimes even imperfect fetuses, or many of their members, in the simplest niduses in which various animal fluids, possessing a vital principle, can obtain a lodging; of which innumerable instances are treasured up in the *Acta Curiosorum* of the physiologist.

Hence where this power has no existence, the products indefinite and anomalous.

Hence monster-growths in every part of the body.

Singular exemplifications.

We have hence reason to expect something of the same kind in the cysts or niduses we are now immediately adverting to; which, however, in many cases possess so little energy of action, as never to exceed the size of a small shot, or to consist of more than an insipid fluid rendered glairy or caseous by an absorption of the finer particles of the material effused or secreted; but which by being united with a few corpuscles of red blood, or of carbonaceous matter, become not unfrequently of a black or chocolate hue, the melanosis of Bayle, but not that of Breschet and Laennec: and which by other unions or other changes produced, perhaps, by the anomalous operation of the still inherent principle of life, furnish us with all those appearances which dissections bring to light on the surface or in the substance of the lungs, or whatever other organ may chance to be affected.

Hence the anomalous contents of tubercles.

Such seems to be the origin of tubercles whenever

* Parabysma Hepaticum. Vol. I. Cl. I. Ord. II. Gen. IV. Spec. I.

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they make their appearance. Many writers conceive that for the growth of all such foreign bodies it is absolutely necessary that inflammation should take place, and that the whole of the new matter must be supplied from the sanguiferous system immediately: a doctrine rather upheld by Mr. Hunter's followers than by himself, and directly opposed, as M. Cuvier has justly observed* by the absence of all the signs of inflammation in by far the greater number of passing cases, at least till the morbid growth has fully established itself, and operates by mechanical pressure on some other excitement. While other physiologists have limited such morbid growths to the operation of the absorbent system, or to minute bladders containing a limpid fluid which they have called hydatids; the term being sometimes employed as a mere synonym of bladders or turgid vesicles of serum, in the language of Boerhaave, "hydatides, sive vesiculæ sero turgentes;"† and at other times importing a parasitic animalcule forming a subdivision under the genus tænia of Linnéus, and of which we have already spoken under turgescence of the liver.‡

Some writers suppose, but erroneously, that inflammation is essential, and always present.

Others ascribe the formation of tubercles to the absorbent system alone: or to hydatids: the term hydatids employed in different senses: in Boerhaave synonymous with vesicles of serum: by others denoting a parasitic animalcule.

Dr. Baron has lately brought forward a new hypothesis, founded upon this latter basis, which has the great merit of aiming at much conciliation of opinion, and much simplicity of view, as well as an appeal to a wide body of well substantiated facts. Waving the question of the animalcular origin of the hydatid, as contended for by Dr. Jenner and others, and resigning the critical meaning of the term tubercle as a diminutive substantive, he employs tubercle, vesicle, and hydatid, as nearly synonyms. Tubercles in their incipient state being with him, "small vesicular bodies with fluid contents,"§ the hydatids of his friend Dr. Jenner, and vesicles being parallel with both and distinguished from *tumour* as follows: "I would employ the word *tubercle* to denote those dis-

Hypothesis of Baron.

His meaning of vesicle, tubercle, hydatid, and tumour.

* Anatomie Generale. Tom. IV. p. 517.

† Epist. Anat. ad Fred. Ruysch. p. 82.

‡ Vol. I. Cl. I. Ord. III. Gen. IV. Spec. I.

§ Enquiry illustrating the Nature of Tuberculated Accretions, &c. p. 214.

organizations that are composed of one cyst, whatever may be its magnitude, or the nature of its contents; and by *tumour* I would understand those morbid structures that appear to be composed of more than one tubercle."* GEN. III. SPEC. V. Marasmus Phthisis. Consumption.

From this source Dr. Baron derives tumours of almost every kind, varied merely by the peculiarity of the constitution, or the concomitant circumstances of the organ in which their vesicular or hydatid form first makes its appearance; and hence ramifying into encysted tumours however diversified in their contents, whether limpid, gelatinous, cheesy, pultaceous, medullary or steatomatous; sarcomatous tumours, schirrous tumours, cartilaginous tumours, cancer, and the fungus hæmatodes. He limits their formation to the absorbent system alone; conceiving the sanguiferous to have little or nothing to do with the morbid productions: and upon this point it is that he is chiefly in a state of challenge with the ablest supporters of the Hunterian doctrines.

Affirms them to arise from the absorbent system alone, having no concert with the sanguiferous: and hence at issue with the followers of J. Hunter.

The facts accumulated in Dr. Baron's volume are of high value, and he has amply succeeded in calling the attention of the profession to a peculiarity of morbid organization, which, since the time of Boerhaave and De Haen, has rarely been studied as it deserves; but by generalizing in so great a degree the meaning of distinct terms and the nature of distinct growths, he has not been so successful as could be wished in reducing the subject to the desirable simplicity he has aimed at.

Hypothesis too generalizing.

As all the divisions of the animal frame are equally possest of a living principle, there is no reason why morbid growths, as already observed, may not equally take their rise from any of them, whether blood-vessels, absorbents, or nerves; nor does it seem by any means necessary, admitting the seed of such growths to be a tubercle, that such tubercle should be an hydatid, whether a simple vesicle or a parasitic animalcule.

Morbid growths may originate in any structure, and why. Such tubercular origins need not be hydatid in any sense.

Under this explanation of the subject the following passage from Dr. Baron is a clear expression of daily facts.

General progress under this view.

* Enquiry, ut suprà, p. 213.

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The tubercle "may be pendulous, or embedded in any soft part, or it may be found between the layers of membranes, and wherever the textures are of such a nature as to admit of its growth. It may be so small as to be scarcely visible, or it may acquire a very great magnitude. Single tubercles are often seen in a viscus, while all the rest of the organ is free from disease, and its functions are performed in an uninterrupted manner. But it is evident that the same state of the system, whatever that may be, which calls one tubercle into existence, may generate an indefinite number: that they may be diffused through the whole of a viscus, leaving nothing of its original texture, or they may occupy any portion of it, or extend to the contiguous parts and involve them in the same form of disease."*

Such the progress of tubercles in the lungs.

Such is the general progress of the mode of phthisis immediately before us; and which, according to the degree of increased action in the lungs at large, or in the part that is particularly affected, may be either slow or speedy; though never perhaps so rapid as in the apostematous variety.

May remain long dormant and inactive: in a predisposing diathesis may spread rapidly:

If the organ or the general constitution be not much predisposed to a generation of tubercles, a few may remain for a long time inert, and without any multiplication whatever; but there is often a peculiar diathesis that favours such a complaint, and facilitates its being called from a latent state into an active manifestation by a thousand little accidents; and which, when once excited, encourages the growth of tubercles in great abundance, and finds a rich and ready soil for them, not in one organ only, but in every one.

and in various organs.

There is a case strikingly illustrative of this form of the disease in one of the volumes of the Medico-Chirurgical Transactions,† furnished by Mr. Langstaff. The little patient, who died before the age of puberty, had, together with a very diseased state of the lungs, various tumours formed in different parts of the body, particularly above the clavicle and in the axilla:

Illustration of extensive mischief in the chest.

* Enquiry, ut suprà, p. 216. † Vol. IX.

they were about the size of an egg, and on examining them, after the death of the patient, were found to possess a cellular capsule, and appeared to issue from the cellular membrane; their internal structure was semi-cartilaginous, and they contained a white pulpy substance, mixed with a small quantity of grumous blood.

"On removing the sternum a quantity of bloody fluid flowed from the left side of the thorax. This side of the chest appeared filled (except the small cavity produced by the fluid which escaped) with broken down coagulated blood, and a pulpy mass in consistence and appearance so exactly like the cerebrum that I think an anatomist would have been deceived and led to imagine it to be brain, if he had been asked to give his opinion from the structure without knowing the place in which it was formed. The pulpy mass had accumulated in such an enormous quantity on the pleura pulmonalis, as to push the heart considerably beyond its usual situation into the right side of the chest, besides having encroached on the abdominal cavity. A perpendicular section of the disease proved it to be formed of a congeries of variously sized tumours, some as large as a small lemon, and all possessing delicate cysts. The consistence of these tumours was chiefly a brain-like mass, mixed with coagulated blood: but the largest kind were not unlike those described in the axilla and above the clavicle. In the section the lung was recognized, but so much condensed by the surrounding disease that it must have been completely useless in respiration, for a considerable time previous to the boy's death. This appearance also proved that the tumours had grown more from the surface than the substance of the lung: and this opinion was corroborated by the state of the lung on the right side, the tumours then occupying chiefly the surface beneath the pleura, many of which had by their growth occasioned absorption of that membrane; which allowed of their growing into the cavity of the chest; and would have produced, if the child could have lived much longer, a morbid growth like that on the left side. Some of the tumours on the external part of

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the lung were as large as a walnut: there was also a progressive series of them, from the size of a pepper-corn to the magnitude above mentioned. They projected considerably from the lungs; their external appearance was delicately white, as if possessed of low vascularity; figure roundish without any central depression, and each had its cyst. Their internal arrangement, more especially the larger kind, was a blended admixture of a semicartilaginous and pulpy matter with small coagula of blood."

In this case the abdominal organs were little affected, except in being pushed somewhat lower down than is natural by the pressure of the diaphragm from above. The spleen and one of the kidneys were slightly affected with tubercles, but the stomach, intestines, liver, mesentery, and peritonæum, were perfectly free from misaffection. In other instances, however, even where there is less utter disorganization, the disease affords a far more evident proof of associate action in the organs of the chest and abdomen, though it should be observed, as we have already had occasion to remark under DYSPEPSY,* that when the morbid action commences in the abdominal organs, it far more readily passes into those of the chest, than when it commences in the chest, into those of the abdomen; instances of which have been sufficiently noticed under the complicated species of parabysma.† These, however, are extreme examples; for in most cases of tubercular phthisis, the disease has made far less progress at the time of its proving fatal, and is often confined to the seat of the lungs alone, and even to an evolution of tubercles of minute size and uniform simplicity of contents, mostly consisting of a whey-like or cheesy material, produced by an absorption of the finer parts of the fluid which most probably filled it at first, and more or less discoloured from circumstances already adverted to. A certain but low degree of inflammatory action, however, as already observed, seems to favour a more rapid forma-

But often the abdominal organs unite in the same action.

But these cases extreme.

* Vol. I. Cl. I. Ord. I. Gen. V. Spec. VII.

† Id. Cl. I. Ord. II. Gen. IV. Spec. VII.

tion of fresh tumours, and an enlargement of those already in existence; and the same may be observed of the accompanying hectic fever. If this be decided and considerable, the disease may run its course in four or five months, and sometimes sooner. If the hectic be undecided and only occasional, the disease may play about the system for some years, and at length prove equally fatal. If the inflammatory action exceed the low degree we have just adverted to, ulceration and suppuration usually follow, and the tubercular form passes into, or is united with the apostematous.

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Course may be rapid and why: or tardy and why: or may pass into the apostematous form, and why.

Phthisis, as already observed, is a disease of high antiquity as well as of most alarming frequency and fatality. So frequent, indeed, is it, as to carry off prematurely, according to Dr. Young's estimate, and the calculation is by no means overcharged, one-fourth part of the inhabitants of Europe:* and so fatal that M. Bayle will not allow it possible for any one to recover who suffers from it in its genuine form.† I can distinctly aver, however, that I have seen it terminate favourably in one or two instances where the patient has appeared to be in the last stage of the disease, with a pint and a half of pus and purulent mucus expectorated daily, exhausting night-sweats and anasarca; but whether from the treatment pursued or a remedial exertion of nature I will not undertake to say. Dr. Parr affirms that he has witnessed six cases of decided phthisis recovered from spontaneously. The ordinary period of the consumptive diathesis has been stated to be from the age of eighteen to that of thirty-five, occasionally anticipating the first, and overpassing the second, of these limits; the mean term of its proving fatal has been fixed at about thirty; and the annual victims to its ravages in Great Britain, Dr. Woolcombe has calculated at fifty-five thousand.‡

Extent and fatality of phthisis:

altogether incurable in the opinion of Bayle. This opinion opposed by occasional facts.

Supposed range of the consumptive diathesis.

Mean rate of fatality.

Said to be on the increase; but perhaps erroneously. Explained.

During the last half century it is said to have been considerably on the increase; but this is perhaps chiefly ow-

* On Consumptive Diseases, Ch. III. p. 20.

† Recherches sur la Phthisie Pulmonaire. Par. 1810.

‡ Remarks on the frequency and fatality of different diseases, &c. 8vo. Lond. 1808.

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ing to the greater number of infants of delicate health who are saved from an early grave by the introduction of a better system of nursing than was formerly practised; yet who only escape from a disease of infant life to fall before one of adolescence or adult years. And for the same reason savages rarely suffer from consumption, as they only rear a healthy race and lose the sickly soon after birth.

At what period of life is consumption most frequent? Doctrine of the Greek schools and of Cullen, apparently opposed by the tables of various places.

The question however concerning the actual range of the consumptive diathesis, or, in other words, at what period of life consumption is most frequent, is still open to inquiry. It was a common doctrine among the Greek physicians, and it has very generally descended to our own day, that phthisis rarely occurs before fifteen or after thirty-five years of age; and Dr. Cullen has entered into an ingenious argument to show why it should be so. Yet the tables that have been kept in most parts of the world seem to indicate the contrary; or that, at least, as many die of this disease and even originate it after thirty-five or forty years of age as antecedently to this period. One of the first pathologists who appears to have called the public attention to this general concurrence of the tables and bills of mortality, is Dr. Woolcombe; and he particularly adverts to the proportions observed in the Dispensary at Plymouth, as being the chief source from which he drew his calculations. He tells us that of seventy-five deaths from consumption, which occurred within the range of this establishment, ten took place before the age of fifteen, sixteen between fifteen and thirty, and forty-nine above the age of thirty; twenty-three of these forty-nine, moreover, being above the age of forty.*

At Plymouth, collected.

Dr. Alison‡ has given the result of various other tables most of which are in consonance with Dr. Woolcombe's. Thus Bayle, in his Treatise on Consumption, notices a hundred cases above fifteen years of age, all of which ter-

* Remarks on the frequency and fatality of Diseases, &c. p. 75.

‡ On the Pathology of Scrophulous Diseases. Trans. of the Medico-Chir. Soc. Edin. Vol. I.

minated fatally in the hospital of La Charité at Paris, and after the following proportions: thirty-three below the age of thirty, and sixty-seven above it, of whom, forty-four were upwards of forty.* So Haygarth, in his account of the deaths from phthisis in the course of two years at Chester, makes the total a hundred and thirty-five, of which, twenty-five occurred before the age of fifteen, forty-two between fifteen and thirty, and sixty-eight above thirty; forty-four of these last being above forty.† "In the practice of the New Town Dispensary at Edinburgh, Dr. Alison tells us there have been fifty-five deaths from phthisis in the last two years, of these, eight occurred before fifteen years of age; thirteen between fifteen and thirty; thirty-four after thirty; and of these last twenty-four after forty."

Gen. III. Spec. V. Marasmus Phthisis. Consumption. Hospital of LaCharité. Chester. Edinburgh.

So in Sussmilah's table of deaths at Berlin in 1746, out of six hundred deaths from phthisis, two hundred and fifty-one are stated to have occurred before fifteen years of age; seventy-three between fifteen and thirty; and two hundred and ninety-six above the age of thirty; two hundred and thirty of which occurred after the age of forty.

Berlin.

In this last table a greater number of deaths took place within the first fifteen years than in any fifteen years afterwards. And a like surplus occurs in the calculations at Warrington recorded by Dr. Aikin: the proportions being twenty-four below the age of fourteen, thirty-six between fourteen and fifteen, and the same number above the age of forty-five.‡ While at Carlisle, as we learn from Dr. Heysham, out of two hundred and fourteen deaths, fifty-nine anticipated the age of fifteen, sixty took place between this period and thirty; and ninety-five above the age of thirty, sixty-one of these being above that of forty.§

Warrington. Carlisle.

The general result, therefore, seems, at first sight, to oppose in a very striking degree the doctrine of the Greek Schools, and those who have followed them, and to show

The result apparently at variance with the doctrine of the Greek schools.

* Bayle, p. 42. † Phil. Trans. lxiv. lxv. ‡ Phil. Trans. Vol. liv.

§ Milne, on Annuities, Vol. II. p. 464.

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that the age from fifteen to thirty is most exempt from consumption, while that above thirty or even forty to the close of life is most distinguished by fatality from this disease, though the period below fifteen is also seriously invaded by it.

This doctrine explained:

But the doctrine of the Greek Schools relates to idiopathic consumption as the product of a phthisical diathesis; or, in other words, affirms that this diathesis, when not called into action by accidental excitements, is most disposed to show itself between the ages of fifteen and thirty-five. And, thus modified, it is probable that the doctrine holds good to the present day, notwithstanding the apparent contradiction of the tables now adverted to. For with respect to the cases of consumption that anticipate the age of fifteen, by far the greater part of them are secondary instead of primary or idiopathic affections, and follow as sequels of a strumous habit that has previously shown itself in a morbid condition of the mesentery or some other organ, with which the lungs at length associate in action; though but for such an incidental excitement they would probably have remained quiescent for several years longer. In many instances indeed they are, to the last, rather tabes *strumosa*, strumous or mesenteric decline, than phthisis or consumption properly so called, though included in the bills of mortality or other tables under this last name. And as we have already observed that variolous and vaccine inoculation carry various sickly infants through the period of infancy, who would otherwise have fallen victims to the small-pox, yet who a few years afterwards, from the same sickliness of constitution, sink beneath the assault of decline, or phthisis, we see sufficient reason for the greater number of early deaths in our own day from what is ordinarily called consumption, and what often is strictly so, though of a secondary or catenating, instead of a primary or idiopathic kind, than was known to the Greek authorities, whose doctrine, relating to idiopathic phthisis alone, is not hereby interfered with.

and modified: and thus not opposed to the above calculations.

Consumption primary and secondary: idiopathic or sequential.

Why frequent in early life.

Why frequent in later life.

In respect to the exuberant cases that occur in later

life than thirty, they are, for the most part, far less a result of a phthisical diathesis, than of an accidental exposure to causes peculiarly operating upon the lungs, and exciting them to a morbid action, so as to produce the disease, whether there be any hereditary taint, or predisposition to consumption, or whether there be none.

Incidents.

These causes are chiefly the habitual influence of a higher degree of heat or of cold, and especially the latter, than is consistent with that euthesy or perfection of constitution on which sound health depends; and particularly the mischievous influence of a temperature perpetually varying from high degrees of heat to those of cold; and a like mischievous exposure to irritating gasses, or spicular dust perpetually inhaled in various chemical or handicraft occupations, of which we shall have to speak more particularly in the sequel. Above thirty years of age the stations of mankind are usually fixt, and whether healthy or unhealthy, they cannot easily be abandoned.

If, then, we examine the kind of consumption which takes place above this age, we shall find it, in by far the greater number of cases, confined to the lower classes—to those engaged in the occupations just noticed, or who have injured themselves by intemperance; while the classes above them, who have passed safely through the period of from fifteen to thirty or forty years of age, and are free from the incidental excitements alluded to, rarely add to the number of deaths from consumption; and may be regarded as having, in a considerable degree, lost whatever predisposition they had to the disease in an anterior stage of life. Thus again confirming the correctness of the earlier and more common doctrine upon this subject, which refers chiefly to consumption as issuing from a phthisical diathesis.

Difference in phthisis as occurring in earlier life, and during the phthisical diathesis; and as occurring from incidental causes afterwards. The former tubercular; the latter catarrhal

There is hence a material difference very generally discernible in the nature of the disease as occurring in earlier life, or during the natural range of the predisposition, and as occurring from incidental excitements afterwards. The first is usually, though not always, of the tubercular variety; the last, as usually of the catarrhal, or aposte-

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matous, most commonly of the catarrhal modification, originating from habitual irritation, and repeated and neglected inflammation, not at first of an unhealthy character, for the most part more active than tubercular inflammation; and, where suppuration does not take place freely, leading to a dark-hued or hepatised induration.

of apostematous.

Predisponent and exciting causes.

The causes of phthisis, then, are of two kinds, the predisponent, and those that excite the predisposition into action, or operate even where there is no predisposition whatever.

Of the nature of the predisponent cause, we know little more than that it appears to appertain to a peculiarity of constitution which will be noticed presently. The exciting or occasional causes are very numerous, as mechanical irritation of the lungs from swallowing a piece of bone; the dust of metallic or other hard substances perpetually inhaled; frequent and sudden changes of temperature or exposure of the body to cold when in a heated state and unprepared for it; overaction in speaking, singing, or playing on a wind instrument; the irritation of various other diseases, as worms, scrophula, syphilis, or measles; the sudden suppression of a cutaneous disease that has continued long and formed a part of the habit, as itch; or of any habitual discharge as that of menstruation, or blood from the hemorrhoidal vessels, when the discharge has become periodical: the irritation of a too rapid growth of the body, and that of various passions perpetually preying upon the individual: as mortified ambition, disappointed love, home-longing,* when at a remote distance from one's friends and country.

Exciting causes numerous.

Mechanical irritation.

Examples of consumption from a mechanical irritation of the lungs are peculiarly numerous, and they furnish cases of every variety of the disease according to the habit or idiosyncrasy, though the apostematous is less frequent than the rest. So common is this complaint among persons employed in dry-grinding, or pointing needles in needle-manufactories, that Dr. Johnstone of Worcester

Fine acuated dust floating in the air.

* R. Hamilton, in Duncan's Med. Com. XI. p. 343.

informs us they seldom live to be forty, from the accumulation of the dust of the grind-stones in the air-cells of the lungs, and the irritation and suppuration which follow.* It appears to be little less common among knife and scythe-grinders; whence, according to Dr. Simmons, the disease thus originating is called the grinder's rot,† and Wepfer gives an account of its proving endemic at Waldshut, on the Rhine, where there is a cavern in which mill-stones are dug and wrought, the air is always hot even in the winter, and a very fine dust floats in it, which penetrates leathern bags, and discolours money contained in them. "All the workmen," says he, "become consumptive if they remain there for a year, and some even in a shorter time; and they all die unless they apply early for assistance."‡ And, hence, Dr. Fordyce had much reason for regarding the dust of the streets of London, as a serious cause of pulmonic disorders;§ though it is a cause that has been much diminished since the introduction of paving and watering. As these are causes that operate at all ages, consumption amongst such persons occurs at all ages also; in patients, however, beyond forty it may, for the most part, be regarded as a strictly original disease, the consumptive diathesis having, by this time, as already observed, gradually lost its influence. And it is on this account that Dr. Alison regards the tubercular or strumous form as rarely taking place after the age of thirty-five or forty,‖ thus confirming the ancient, and, indeed, the common opinion, how much soever opposed by the tables we have already referred to.

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In some places endemic from this cause.

A lodgement of some fragment of a bone even in the esophagus has, in like manner, been a frequent cause of phthisis, which has often been protracted through a long

Irritation from a lodgement of a bony fragment in the esophagus or stomach.

* Mem. Med. Soc. v. 1799. p. 89.

† Pract. Observ. on the Treatment of Consumptions, 3vo. 1780.

‡ Observationes de Affect. Capitis. 4to. Schaff. 1727-8, quoted by Young on Consumptive Diseases, p. 206.

§ Trans. of Soc. for the Improvement of Med. and Chir. Knowledge. Vol. I. 252.

‖ Observations on Scrophulous Diseases, &c. Trans. of the Medico-Chir. Society of Edinburgh, Vol. I. 1824.

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period of time. Thus Claubry gives a case of this kind which had continued for fourteen years, and the patient seemed to be in the last stage of a consumption when he was fortunate enough to bring up the piece of bone spontaneously, in consequence of which he recovered, though for the preceding four years he had laboured under an hæmoptysis.* Mr. Holman describes a similar case that had run on for fifteen years, accompanied with cough, hæmoptysis, and hectic diarrhœa; and which was also speedily relieved in consequence of the bony fragment, three quarters of an inch in length, and apparently carious, being suddenly coughed up after the discharge of a pint of blood.†

Irritation from an immoderate use of the vocal organs in speaking, singing, or using wind-instruments.

A moderate use of the vocal organs, as of any other, tends to strengthen them, and to enable public speakers, singers, and performers on wind instruments to go through great exertion without inconvenience, which would be extremely fatiguing to those who are but little practised in any of these branches; but the labour is often carried too far, and the lungs become habitually irritated, and hæmoptysis succeeds. I have known this terminate fatally among clergymen; who have lamented, when too late, that in the earlier part of life they spent their strength unsparingly in the duties of the pulpit. Hence, Dr. Young observes from Rammazini,‡ that public speakers, readers, and singers, are most liable to pulmonary diseases, and that Morgagni and Valsalva have confirmed the observation. Cicero himself felt it necessary, as he tells us in his book on orators, to retire from the forum for two years, during which he travelled into Asia, and afterwards returned with renewed vigour to the duties of his profession; and Moliere died of hæmoptysis, immediately after performing, for the fourth time, his Malade Imaginaire.§

Evidenced in Cicero.

Irritation from sympathetic action.

There are many diseases that have a peculiar tendency

* Sedill. Journ. Gen. Med. XXXIV. p. 13. 1809.

† Lond. Med. Journ. VII. p. 120.

‡ On Consumptive Diseases, p. 264.

§ Van Swieten. Aph. IV. § 1201. p. 49.

to excite phthisis from their close connexion with the lungs or affinity to hectic fever, which is one of its most prominent symptoms. Thus, neglected catarrhs form a frequent foundation, and measles for the same reason. Whether the tubercles found in the substance of the lungs in the tubercular variety of consumption, be, in every instance, strictly scrophulous, may admit of a doubt; that they are so in many cases is unquestionable; and hence scrophula becomes very generally an exciting, and not unfrequently, perhaps, a primary cause, of this disease. "There is a case by Lissardet, of a fatal consumption which succeeded to a psora, supposed to have been too hastily cured; and another by Cauvet of a more favourable termination, under similar circumstances, the dartre having re-appeared. It has occurred more than once to myself, that the lungs have been attacked during the cure of cutaneous affections, and, in one instance, fatally, even where no hasty mode of treatment had been pursued."*

The tendency of the syphilitic poison to produce phthisis has been noticed by almost every writer from the time of Bennet, who particularly dwells upon it;† but whether this would be adequate to such a purpose without an hereditary predisposition is uncertain. And the same remark may be made respecting worms which Morgagni has stated to be a very common cause.‡ Indeed any habitual irritation, in any part of the alimentary canal, seems capable of exciting a sympathetic action in the lungs; and hence Wilson in Dr. Duncan's Annals, gives a case of hectic in a child produced by swallowing a nail two inches long, which remained in the stomach fifteen months, and was then thrown up, and succeeded by a recovery of health.§

Rapid growth is always attended with debility and consequent irritability of the entire system; and, where there is a predisposition to consumption, this also becomes often its harbinger, unless great caution is observed on

* On Consumptive Diseases, p. 269.

† Vestibulum Tabidorum, 8vo. 1654. Leyd.

‡ De Morb. Thoracis. Lib. II. Ep. Anat. XXI. 43. § Vol. I. 1796

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the occasion. Richerand relates a case of this kind that terminated fatally, the individual having grown more than an English foot in a year.* I have known a still more rapid growth without any other inconvenience than that of languor; but in this case there was no phthisical predisposition.

Where the chest labours under any misformation we can readily trace another cause of excitement, and are prepared to meet the examples that from this source so frequently occur to us in practice. But it is less easy to explain by what means persons otherwise deformed, and particularly those who have had limbs amputated should be more liable to consumption than others; yet this also is a remark that has been made by Bennet,† though I do not know that it has been supported by concurrent observation.

Irritation from sudden vicissitudes of the atmosphere. This the most common and active of all irritations.

Of all the occasional or accidental causes of phthisis, however, frequent and sudden vicissitudes of temperature are probably the most common;‡ so common, indeed, and at the same time so active, as often to be a cause of consumption in constitutions where we cannot trace any peculiar taint or predisposition whatever. Several hundred cases of phthisis from this cause, among which were many fatal ones, occurred in the channel fleet that blockaded the port of Brest in April 1800, as is particularly noticed by Dr. Trotter. The summer was hot and dry, the duty very severe; and the sailors, wet with sweat, were frequently exposed to currents of air at the port-holes; and little time was allowed for refitting.§

Severe ravage in the channel fleet, 1800.

Mortality in Great Britain from this cause.

At Paris and Vienna.

Hence the most frequent examples of consumption are to be found in those countries which are most subject to changes of temperature. In Great Britain, it is calculated that this disease carries off usually about one-fourth of its inhabitants; at Paris, about one-fifth; and at Vienna, one-sixth; while it is by no means common in Russia,

* Sedill. Journ. Gen. Med. xx. p. 255. † Tabid. Theatr. p. 99.

‡ Broussais, ut suprà.—Hastings, Essay on Bronchial Inflammation.

§ Medicina Nautica. Vol. III. p. 325.

and still less so in the West Indies; for it is checked in both regions by the greater uniformity of the atmosphere whether hotter or colder.* It is a singular fact, and not well accounted for, that of all places which have hitherto been compared, the proportional mortality from consumption appears to have been the greatest at Bristol; and this, not among its occasional visitors, but its permanent inhabitants; and yet, as though in defiance of experience, this very place has been chosen as the great resort of consumptive persons.† Nor does its mineral water seem entitled to any higher compliment than its atmosphere. Dr. Beddoes affirms, in direct terms, that it is of no manner of use;‡ and Dr. Thomas, in more measured language, speaks nearly to the same effect: "In my humble opinion," says he, "the waters of the Hot-wells are by no means deserving of the credit ascribed to them; as, during a residence of some time at and near these wells, I cannot charge my memory with a single instance where any person, labouring under a confirmed phthisis, experienced much relief from their use alone."§

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In places less exposed to its causes. Consumption most frequent at Bristol; not merely among occasional visitors, but permanent inhabitants.

Whatever, indeed, produces weakness or languor of action, whether generally or locally, as in the organ of the lungs, or those with which it is connected by a peculiar sympathy, may be regarded as a predisponent cause of consumption, or as having a tendency to call forth its latent diathesis into a state of action. And hence heat when above the range of health and entony, is often found a cause as well as cold, though it does not act so manifestly or so rapidly. But of its power of action we have a clear proof in the greater frequency and fatality of consumption among the native troops of hot climates during the fatigues of war than among Europeans who have just been inured to the climate, and have, for a less period of time, been under the influence of its relaxing agency.

Extreme and habitual heat a cause.

* Woolcombe (Dr. W.), Remarks on the frequency and fatality of Diseases, 8vo. Lond. 1808.—Southey (Dr. H. H.), Observations on Pulmonary Consumption, 8vo. Lond. 1814.

† Young, ut suprà, p. 42. ‡ Manual of Health, &c. 12mo. Lond. 1806.

§ Pract. of Phys. p. 508. 6th Edition.

GEN. III. SPEC. V. Marasmus Phthisis. Consumption. Illustrated. West Indies.

"We know at least," observes Dr. Alison, "that a great majority of the inhabitants of these climates, both negroes and Hindoos, are unusually prone to scrophula, when they come to temperate climates, and even suffer from it, in some instances, in their own, where Europeans are nearly free from it. I was favoured by Dr. Fergusson, lately inspector of hospitals in the Windward and Leeward Islands, with a perusal of the report of the deaths and chief diseases occurring in the army in these colonies, in each quarter, from March 1816, till March 1817, distinguishing the deaths among the white and black troops."* According to these reports the average strength of the army, for the entire year, consisted of seven thousand three hundred and thirty-seven whites, and five thousand seven hundred and seventy-two blacks, out of which there died of fever, whites, one in 15.3; blacks, one in 151.8: of dysentery, whites, one in 21.4; blacks, one in 58.9: but of pulmonic disease, whites, one in 89.1: blacks, one in 45. "Fever, therefore," remarks Dr. Alison, "caused ten times as great a mortality among the white troops as among the blacks, and dysentery nearly three times as great; but pulmonary complaints caused twice as great a mortality among the blacks as among the whites. The deaths from this cause were one in 10.9 of the whole mortality among the whites; and one in 2.06 of the whole mortality among the blacks.—The pulmonic disease among the black troops was almost exclusively phthisis, which attacked them chiefly in the more elevated situations of the interior of the islands, where the heat is least oppressive, and where the Europeans were most free from the diseases which, to them, are in that climate most fatal."†

Why the warmer regions of the Mediterranean more remedial to strangers than to natives

On this account we can readily see whence in numerous instances, a residence in the warmer regions of Europe, proves remedial to occasional visiters from colder and less genial countries, although the tables of mortality do not show a much greater immunity from consumption among

* Trans. Medico-Chir. Soc. Edin. Vol. I. p. 297. † Ibid. p. 298.

the natives, than exists in higher latitudes. Negroes and Hindoos are by no means exempt from this disease, and we shall presently have to show that the southern borders of the Mediterranean give proofs of a frequency and fatality that would be sufficient to deter strangers from trying those coasts as a cure, did not daily observation justify our recommending them to patients of a more northerly origin.

GEN. III. SPEC. V. Marasmus Phthisis. Consumption. Causes.

Where a consumptive diathesis has once originated, it is often very evidently transmitted to succeeding generations; and there is great reason to believe that the disease is in a certain degree contagious. M. Portal, and a few other pathologists of distinction, have doubted or denied that it possesses any such property; but the apparent instances of communication among near relations and close attentive nurses, and especially between husbands and wives, who have fallen victims to it in succession, are so frequent, that its contagious power has been admitted by most practitioners and in most ages. Aristotle appeals to it as a matter of general belief among the Greeks in his day:* and it has since been assented to in succession by Galen, Morton, Hoffman, Vogel, Desault, Darwin, and most modern writers.

Consumptive diathesis hereditary.

Doubted by Portal and a few other pathologists.

But conceded to by most from the earliest ages.

Atmosphere of contagion sometimes wide:

I have myself been witness to various cases which could not be ascribed to any other cause; and Dr. Rush has given an account of a consumption manifestly contagious, which spread from the proprietors of an estate among the negroes, who were neither related to the first victims, nor had been subjected to fatigue or anxiety on their account, and amongst whom it scarcely ever makes its appearance.† The disease, however, is but slightly contagious, admitting it to be so at all; and seems to demand a long and intimate communion, as, for instance, that of sleeping or constantly living in the same room, to render the miasm effective. Yet, in the present state of the question, most judicious practitioners from

but very rarely so.

Hence caution necessary among attendants.

* Problem, Sect. I. 7.

† Medical Inquiries and Observations, &c. Vol. I. 8vo. Phil. 1789.

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the time of Galen have thought it right to follow his advice, and to caution attendants upon consumptive patients against the danger of being constantly about their persons through the whole course of the disease.

Character of consumptive diathesis. Complexion. Magnitude of pupil. Teeth pearly. Eyes peculiarly bright.

The diathesis strictly consumptive is usually associated, in the language of Hippocrates,* and Aretæus,† with a smooth, fair, and ruddy complexion, light or reddish hair, blue eyes, a long neck, a narrow chest, slender form, and high shoulders, or, in the words of Hippocrates, shoulders projecting like wings, and a sanguine disposition. In some instances, however, the skin is dark, and the hair almost black. According to Dr. Withering and Dr. Darwin, the most constant mark of a consumptive habit is an unusual magnitude of the pupil, to which some have added long and dark eye-lashes; but this last character seems loose and unestablished. It is a remark far better supported, that the teeth are peculiarly clear, and the eyes peculiarly bright; and that both become more so when the disease has once commenced its inroad; the former assuming a milky whiteness, and the latter a pearly lustre: showing how completely the animal oil is absorbed and carried off, not merely from the surface and from the interstices of the muscles by which the form chiefly becomes emaciated, but from every organ whatever: and, in the appearance of the teeth, affording an additional proof to those already offered us when treating of ODONTIA,‡ that these peculiar bones are not extraneous bodies, destitute of vascularity, but possessing the same organization as other bones; rendered yellow by a deposit of animal oil, and blanched by its removal.

Inference from this state of the teeth.

Professor Camper, and most physicians with him, affirm that this appearance accompanies all the varieties of the disease; but Dr. Foart Simmons limits it to the tubercular alone; and conceives it to be a distinguishing characteristic of this form of the disease or of a predisposition to it. And he remarks further, that of those who are

* Epidem. v. p. 1142. † Chron. Diss. i. 10. 12.

‡ Cl. i. Ord. i. Vol. i. p. 48.

carried off by tubercular phthisis, the greater number will be found never to have had a carious tooth.*

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The earliest symptoms of phthisis, in whatever manner excited, are insidious, and show themselves obscurely. The patient is, perhaps, sensible of an unusual languor, and breathes with less freedom than formerly, so that his respirations are shorter and increased in number. He coughs occasionally, but does not complain of its being troublesome, and rarely expectorates at the same time: yet, if he make a deep inspiration he is sensible of some degree of uneasiness in a particular part of the chest. These symptoms gradually increase, and at length the pulse is found quicker than usual, particularly towards the evening; a more than ordinary perspiration takes place in the course of the night; and if the sleep be not disturbed by coughing, a considerable paroxysm of coughing takes place in the morning, and the patient feels relaxed and enfeebled. This may be said to form the first stage of the disease: and it is the only hopeful season for the interposition of medical aid.

Origin and progress of the disease.

First stage.

The malady is now decidedly established; the cough increases in frequency, and from being dry is accompanied with a purulent mucus, varying, according to the peculiar modification of the disease, from a watery whey-like sanies, occasionally tinged with blood, to a sputum of nearly genuine pus: which, as Aretæus has well observed, may be livid, deep-black, light-brown, or light-green; flattened or round; hard or soft; fetid or without smell. In many cases it is very scanty; and we may also add with Aretæus, that in some consumptions there is no expectoration at all; for in the apostematous variety the sufferer has sometimes died before the vomica has broken. The uneasiness in the chest, only perceived at first on making a deep inspiration, is now permanent and attended with a sense of weight: the hectic fever has assumed its full character; the patient can only lie with comfort on

Second stage.

* Practical Observations on the Treatment of Consumption. By Samuel Foart Simmons, M.D. 8vo. London, 1779.

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one side, which is usually the side affected; and the breathing, as Bennet has remarked, is frequently accompanied by a sound like the ticking of a watch. The strength now fails apace; the pulse varies from about a hundred to a hundred and twenty or thirty; the teeth, from a cause just pointed out, increase in transparency, and the sclerotica of the eye is pearly-white; "the fingers," to continue the elegant description of Aretæus, as given by Dr. Young, "are shrunk, except at the joints, which become prominent; the nails are bent for want of support and become painful: the nose is sharp, the cheeks are red, the eyes sunk, but bright, the countenance as if smiling; the whole body is shrivelled; the spine projects, instead of sinking, from the decay of the muscles: and the shoulder-blades stand out like the wings of birds."

Third stage.

The third stage is melancholy and distressing, but usually of short duration. It commences with a depressing and colliquative diarrhœa; but till this period, and occasionally indeed through it, the patient supports his spirits and flatters himself with ultimate success, while all his friends about him are in despondency, and find it difficult to suppress their feelings. The voice becomes hoarse, the fauces aphthous, or the throat ulcerated, with a difficulty of swallowing. Dropsy, in various forms, now makes its approach; the limbs are anasarcous, the belly tumid, or the chest fluctuating; and the oppression is only relieved by an augmentation of the night-sweats or of the diarrhœa; for it is generally to be found that the one set of symptoms is less as the other is greater. "A few days before the patient's death, he is frequently unable to expectorate from apparent weakness, and sometimes dies absolutely suffocated: but much more commonly the secretion of pus, as well as the expectoration, has ceased; as if the capillary arteries had lost their power, or the fluids of the system were exhausted. There is also sometimes a degree of languid delirium for some days, and occasionally a total imbecility for a week or two: though, in general, the faculties are entire, and the

senses acute, the patient being perfectly alive to the danger and distress of his situation, and retaining, even when his extremities are becoming cold, a considerable quickness of hearing and feeling. The closing scene is often painful, but it sometimes consists in the gradual and almost imperceptible approach of a sleep which is the actual commencement of death."*

Progress varied in different cases from habit or idiosyncrasy.

Such is the common progress and termination of the disease; but it varies considerably in the character and combination of its symptoms, and particularly in the tardiness or rapidity of its march, according to the habit or idiosyncrasy of the individual, or the variety of the disease itself. Where the constitution is firm, and the hereditary predisposition striking, it commonly assumes the apostematous form, and runs on to the fatal goal with prodigious speed, constituting what among the vulgar is called, with great force of expression, a galloping consumption. In this case, the activity of the lymphatic, and, indeed, of every other part of the general system is wonderful: the whole frame is in a state of estuation and greedily preying upon itself. The animal spirits are more than ordinarily recruited, and all is hope and ardent imagination; the secernents play with equal vigour, and the skin is drenched with moisture, the bronchial vessels are overloaded with mucus, vomica after vomica becomes distended with pus, and the bowels are a mere channel of looseness. The absorbents drink greedily; and animal oil, cellular membrane, parenchyma, and muscle, are all swallowed up and carried away, till every organ is rapidly reduced to half its proper weight and bulk, and the entire figure becomes a shrivelled skeleton. So swift was the progress of the disease in the case of the Duchess de Pienne, that M. Portal informs us she died in ten or twelve days from the first alarm.

Sometimes peculiarly rapid; especially in the apostematous variety.

Has run its course and destroyed in ten days.

Suffocation upon the bursting of a large vomica.

If before this an extensive vomica burst suddenly and with a wide opening into the trachea, or larger bronchial tubes, suffocation follows instantly. If its aperture be

If the aperture small, death less sudden,

* Young, On Consumptive Diseases, p. 28.

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small, a purulent matter, often diversicoloured, is expectorated in the course of a violent fit of coughing: the expuition then ceases for a few days, and at times, with an apparent relief to the patient: but it returns in a short time, and is always ushered by an increase of the febrile state for the preceding four and twenty hours. The breath now becomes tainted, and is offensive to bye-standers; the appetite is lost, and the lightest foods and most desirable dainties produce a sense of increased languor and anxiety. The patient becomes daily more emaciated: all the symptoms just noticed are exacerbated, till at length a supervening colliquative diarrhœa first diminishes, and then totally suppresses the expectoration, and the sufferer turns himself unexpectedly on his back, and, in a very few days afterwards, draws up his legs, and in this position usually expires suddenly.

but equally certain.

Sometimes remarkably tardy:

On other occasions, the march of the consumption is remarkable for its tardiness. This is particularly the case with the tubercular variety when not quickened in its pace by returns of hæmoptysis. Hoffman gives instances of two or three who lived under the disease for thirty years: and in the Edinburgh Communications is the case of an individual who passed nearly the whole of a long life under its influence, who was consumptive from eighteen to seventy-two, and died of the complaint at last. Of two hundred cases, however, selected by M. Bayle, a hundred and four died within nine months, which may hence be regarded as the mean term.

especially in the tubercular variety.

Observations on dissection.

Dissections concur in showing, in almost every instance, an indurated and ulcerated state of the lungs, while the changes thus exhibited vary greatly in the morbid structure they develope; the more obvious of which, though perhaps constituting the two extremes of these changes, are the white and the dark-coloured or hepatised knobs. The first seems to move forward to a state of inflammation with a slow and pausing step, and forms the basis of the tubercular variety before us. The second is more rapid and uniform in its action, and constitutes the catarrhal or purulent modifications. While, not unfre-

White and dark-coloured knobs. The first inflame slowest. Both often met with in combination.

quently, we meet with both these appearances intermixed in every possible proportion. Yet we perceive, concurrently with the diagnostics of the disease, that its most frequent form is the tubercular; so much so, indeed, that M. Laennec has confined his attention to this variety alone, and will hardly admit of any other.* The tubercles are found indiscriminately in all parts of the cellular texture of the lungs, but more abundantly at the upper and posterior parts. As already observed, they exhibit every diversity of size; are often very minute, but more generally consist of those circumscribed nodules or indurations which Wesser has called grandines. They are whitish and opake, like small absorbent glands, but sometimes more transparent, like cartilage, with black dots in their substance. They augment by degrees till they are half an inch or more in diameter; but in general when they have acquired the size of large peas they begin to soften in the centre, and then open by one or more small apertures into the neighbouring bronchiæ, or remain for a longer time closed, and constitute small vomicæ, containing a curdy half-formed pus. Occasionally, as we have stated, they are found to unite into large abscesses.† Now as we have before observed from Dr. Baillie that nothing like a gland is to found in the cellular membrane of the lungs in a sound state, constituting the seat of these tubercles, and as scrophula selects for its abode a glandular structure, tubercular consumption cannot perhaps with strict propriety be called a scrophulous disease: yet as the untempered fluid contained in the tubercles resembles that of scrophula, and, more especially, as this variety of consumption is very generally found in constitutions distinctly scrophulous, the analogy between the two is extremely close, and has often led to a similar mode of treatment. M. Portal, indeed, contends that glands

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Tubercles, the character of.

Tubercles, what, as they appear on dissection.

This variety not strictly a scrophulous disease;

but closely analogous.

* De l'Auscultation Médiate; ou Traité, du Diagnostic des Maladies des Poumons, &c. Par R. T. H. Laennec, D.M. &c. 2 tomes. Paris, 1819.

† Young, ut supra.—Portal, Observations sur la Nature et le Traitement de la Phthisie.—Boyle, Recherches sur la Phthisie Pulmonaire. Par. 1810.

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exist in great numbers through the whole structure of the lungs, but rather from analogy than from demonstration. And to the same effect M. Laennec; "the tubercles in the lungs," says he, "differ in no respect from those situated in the glands; and which, under the name of scrophula, after being softened and evacuated, are often followed by a perfect cure." Here, however, he tells us, the hollows are not incarned or filled up with a new material, but have their surfaces covered with a semi-cartilaginous membrane, which, as they thus heal or cicatrize, leave as many sound fistulæ as there were formerly tubercles.*

Apostemes found on dissection.

In some cases, proper abscesses or larger vomicæ are found without any trace of tubercles; and especially when the disease has followed rapidly upon peripneumony, or taken place in persons of robust habits or entonic plethora.

Catarrhal inflammation found on dissection.

And, where the catarrhal symptoms have been striking, and, in the increasing hoarseness and free discharge of muculent pus, have evinced extensive inflammation on the surface of the trachea, M. Portal has found the whole extent of the tube lined by a crust resembling bone.

Weight of the lungs sometimes greatly increased:

In some instances, the lungs, from the accretion of new matter, have weighed not less than five or six pounds, which is nearly four times their ordinary weight; but in others, they have been so reduced as, in the language of the same writer, to leave "a vacant space" in the chest; or, in that of M. Bayle, "to be shrivelled into leather."

sometimes reduced, and the organ shrivelled.

On this account, breathing would be impossible if it were not that the lungs in a state of health are capable of containing ten times as much air as is received by an ordinary act of inspiration: and hence are capable of losing a very large portion of their capacity without suffocation. In some cases, one lung has been entirely destroyed, and the office of respiration maintained by the remaining lung alone for many years.† In other cases, blood, and even pins, have been thrown up from time to time in considerable quanti-

* De l'Auscultation Médiate, &c. ut suprà.

† Boneti Sepulchr. Lib. I. Sect. II. Obs. 167.—Parotti, Raccolti d'Opuscoli Scientifici, XLVI. p. 275.

ties, without the least trace of ulceration, or breach of continuity in the membrane or any part of the structure of the lungs.*

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Many ingenious experiments have been invented to distinguish between pus and mucus, in order to determine the actual nature of the disease. Such trials may gratify the curiosity of the pathologist, but from the variable, and frequently complicated nature of the expectoration, as well in the most dangerous as in the earlier stages of the complaint, we can derive little assistance from this distinction. Mr. Hunter, as a test, employed muriate of ammonia, having observed that a drop of pus united with a drop of this fluid is rendered sopy, while neither blood nor mucus is affected by it.† Mr. Charles Darwin

Pus and mucus how distinguishable: but the distinction of no great importance.

Hunter's test.

Darwin's.

> Heu miserande puer! si quâ fata aspera rumpas
> Tu Marcellus eris—

proposed a double test of sulphuric acid, and a solution of pure potass. If, on the addition of water to pus dissolved in each of these separately, there be a powerful precipitation, the matter made use of is determined to be pus: if there be no precipitation in either, it is mucus. But the simplest and truest character of pus, as was first observed and described by Sir Everard Home is, that it is a whitish fluid composed of globules contained in a transparent liquid: that it does not coagulate by heat; and is only condensed by alcohol. The presence of the globules, as remarked by Dr. Young, may be easily determined by putting a small quantity of the liquid between two pieces of plate-glass. If it be pus we shall perceive on looking through it towards a candle placed a little way off, the appearance, even in the day time, of a bright circular corona of colours, of which the candle will be the centre; a red area surrounded by a circle of green, and this again by another of red; the colours being so much

Home's definition.

Young's test.

* De Haen, Ratio Med. I. XI. p. 60.—Willan's Reports, 1796, March, 20.

† See Apostema commune, Vol. II. p. 303.

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the brighter, as the globules are more numerous and more equable. If the substance be simply mucous, there will be no rings of colours; though a confused coloured halo may sometimes be perceived by the mixture of mucus with blood or some other material.

Of importance to determine whether morbid hollows have taken place.

As, however, consumption is by far more frequently a tubercular than a strictly purulent disease, and, perhaps, more generally fatal under the former than under the latter modification, the distinction here sought for is of less importance. It is of more consequence to ascertain whether morbid excavations from any cause, ulcerative or tubercular, have taken place at all; and to this point the attention of physicians has been peculiarly directed, for the purpose, if possible, of obtaining a criterion.

Sundry instruments applied for this purpose.

Avenbrugger's percussion scheme,

warmly supported by Corvissart.

It is now well known that M. Avenbrugger of Vienna suggested, more than half a century ago, the possibility of determining whether there were such morbid hollows, or other diseased condition of the chest by the means of percussion by the hand:* and that M. Corvissart was so much impressed with the importance of the suggestion, that he not only translated Avenbrugger's work on the subject from the German into the French tongue, but recommended his method warmly in his Clinical Lectures and employed it so generally in his practice, as to obtain for it a considerable degree of reputation. There is no doubt of its giving us correct information at times: but the whole process is accompanied with difficulties which we shall notice presently, and in its application is also of limited use. To remedy these evils M. Laennec, from an early period of his life, conceived it possible to attain the same end, and with much greater exactness, by an acoustic instrument.† His mind was directed to the fact, that if the ear be applied to one end of a beam of wood, we may distinctly hear the scratch of a pin

Limited power of application remedied by the stethoscope of Laennec. First hint upon this subject.

* Inventum Novum ex Percussione Thoracis Humani, ut signo, abstrusos interni pectoris morbos delegendi. Vienn. 8vo. 1761.

† De l'Auscultation Médiate; ou Traité du Diagnostic, &c.

when made at the other end: and, taking advantage of this hint, he first made a roll of a sheet of paper wound up close, and well tied, when "applying," says he, "one end of it to the region of the præcordia, and placing the ear at the other end, I was as much surprised as gratified on hearing the heart beat more clearly and distinctly than I had ever done by a direct application of the ear itself." And, hence, he foresaw that the same instrument might also be employed to ascertain a variety of modifications in the pulsation of the heart and the larger arteries.

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Having experimented upon a series of substances he found that bodies of such a density as folded paper, wood, or cane, were best calculated for the purpose; and he at length fixed upon a cylinder of wood of a foot long, and an inch and a half in diameter, with a bore or canal in the centre three lines in diameter. To render this instrument more portable he made it divisible in the middle, like a German flute, the parts however being united by a screw.

Progress of the suggestion.

Form of the cylinder.

When this cylinder, to which he gives the name of a STETHOSCOPE, and which in our own language may be called a CHEST-SOUND, is applied to the chest of a healthy person in the act of speaking or singing, nothing is heard but a kind of low murmuring, more distinct in some parts of the chest than in others: yet where an ulcer or other morbid excavation exists in the lungs a very singular change takes place; for the voice of the invalid is no longer heard by the disengaged ear, but comes entire to the observant ear that is applied to the end of the cylinder opposite to that affixed to the chest. This phænomenon M. Laennec ascribes to the greater degree of strength which the vocal sound exercises in a cavity of wider calibre than the bronchiæ themselves. And the opinion is rendered probable as the same phænomenon occurs when the cylinder is applied to the trachea or larynx. To this apparent transfer of the voice to the chest the experimenter has given the awkward name of *pectoriloquism* or *mediate auscultation of the voice*. And as the same instrument, or

Chest-sound.

Mode of application.

Effect in health.

Singular effect in unsound lungs or other thoracic organ.

Pectoriloquism, or mediate auscultation of the voice.

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with slight variations, is capable of determining the morbid changes that take place in the breathing or contraction of the heart, he hence employs it in like manner to obtain a *mediate auscultation of the respiration*, or of the *pulsation of the heart*, or *the aorta*. For the first of these two purposes however the canal should be gradually widened at the end applied to the chest, in a funnel-form, to an ascent of about an inch, and then suffered to return suddenly to its general calibre. For the second purpose, the canal should be entirely obliterated, which may be easily done by a plug of the same kind of wood; the pulses being propagated through the cylinder by vibratory chords.*

Applied in peculiar cases to diseases of respiration; and of the heart.

How modified for these purposes.

Percussion and auscultation employed simultaneously.

PERCUSSION and AUSCULTATION are in the present day used simultaneously by many physicians in France, and among the rest by M. Laennec himself, and their comparative pretensions have been ably estimated in the same country by Dr. Collin,† as they have in our own by Dr. Forbes.‡

In what disease percussion is chiefly employed.

The diseases in which the former method is chiefly employed are phthisis, dropsy of the chest, chronic pleurisy, chronic peripneumony, emphysema of the lungs, pneumo-thorax, or a morbid communication of the interior of the lungs with the thoracic cavity, and hypertrophy of the heart, or a morbid enlargement of its substance.

How to be applied.

In the use of this kind of exploration the patient should be in a sitting posture, the points of the fingers brought close together may be employed, or the flat of the hand, and either upon the naked chest or with the body-linen drawn tight over it. The action of percussion is applied, as circumstances may direct, to the fore-part of the chest,

To what parts to be applied.

* De l'Auscultation Médiate; ou Traité de Diagnostique des Maladies des Poumons et du Cœur, &c. Par R. T. H. Laennec, D. M. &c. 2 toms. Paris, 1818.

† Des Diverses Méthodes d'Exploration de la Poitrine et de leur Application au Diagnostics des ses Maladies, 8vo. Paris. 1824.

‡ Original Cases, with Dissections and Observations Illustrating the Use of the Stethoscope and Percussion, &c. 8vo. London. 1824.

the sides, or the back. In the first of which cases the patient is to hold his head erect, and throw back his shoulders, that the chest may be protruded, and the skin and muscles drawn tight over its bones, by which the sound is rendered most distinct. In striking the lateral parts of the chest the patient is to hold his arms across his head, so that the walls of the thorax may become tense, and the sound rise distinct as in the former instance. If the back be operated upon, the patient is, for the same reason, to bend forward, and draw his shoulders towards the anterior part of the chest, hereby rounding the dorsal region. The degree of percussion is to be varied according to the subject and the place; so that a more powerful impulse is to be employed in a fat or robust than in a slender and emaciated subject; for the stroke that is sufficient to educe a clear sound in the latter case, may draw forth none in the former.

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The amount of the sound must depend upon the general sum of the hollow contained in the chest, as in striking a cask, to which M. Avenbrugger very forcibly compares it. And hence to determine whether this amount be more or less than it ought, it is necessary we should become first acquainted with its character in a healthy state, and accustom ourselves to the percussion of those who are well. Its changes from this standard are of three heads; it may be greater or stronger than natural; dull or obscure; or totally wanting. The first takes place where the cavity or hollow is enlarged, as in emphysema of the lungs, which, so to speak, resemble a cask comparatively empty, or rather containing a large volume of air: the second in edema of the lungs, severe catarrh, or the earlier stage of peripneumony; in which the interior is more than usually occupied with dense matter: and the third in a tuberculated or hepatised state of the lungs, or when they are crowded with any other morbid secretion or induration, so as to be choked up, and leave no room for resonance.

Amount of the sound how measured.

Changes from a state of health of three kinds.

Stronger than natural.

Dull or obscure.

Totally wanting.

The chief difficulties attending the diagnostic of per-

Difficulties appertaining to percussion.

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cussion are the long habit required for its use before it can be employed with any advantage, and the peculiar tact or address with which the stroke must be applied to produce its proper effect: the limited power of our having recourse to it in many cases of females on the score of delicacy; and its occasional uselessness, perhaps deception, in other cases. Thus it is altogether unavailing in patients possessing much corpulency; and although it affords a pretty clear indication in hydrothorax, when the chest is but partially loaded, and in peripneumony before suppuration has taken place; yet as no sound is yielded when the chest is quite full of fluid, and a very different sound to what was at first elicited when a vomica has burst, both these diseases may be mistaken in their most important stage. In nervous coughs, asthmas, dyspnœas, and polypous concretions about the heart in young subjects M. Avenbrugger himself admits the total inability of his method.

Mediate auscultation possessed of superior advantages.

The diagnostic of AUSCULTATION has some advantage in most of these respects. It is employed, as we have already observed, for three distinct purposes; as a test of the VOICE, of the RESPIRATION, and of the ACTION OF THE HEART AND AORTA.

When employed as a test of the voice, it gives various distinct measures, resonance: pectoriloquism: hægophonism: Metallic tinkling. Indications of these.

When employed for the first purpose, or that of determining the state of the voice, it affords, under different circumstances, four different kinds of measure: as that of its degree of intensity, which M. Laennec has denominated its *resonance;* its articulation, to which, as above stated, he has given the name of *pectoriloquism;* its suppression, or under-tone which, from its supposed resemblance to the voice of goats, he has called *hægophonism;* and its vibratory clink, distinguished by the name of *metallic tinkling*. The first of these tests, when existing in a higher tone than natural, is supposed, for the most part, to indicate a certain degree of induration in the substance of the lungs. The second, or that of pectoriloquism, we have already noticed: it is a measurer of tuberculous excavations communicating with the bronchia. The third indi-

cates, in the opinion of M. Laennec, a flattening of the bronchial tubes. And the fourth a morbid communication of the interior of the lungs with the cavity of the chest.

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Where the stethoscope, or chest-sound, is employed as a measurer of the RESPIRATION, it runs parallel with the modifications of percussion, and determines its intensity, its atony, and its absence; and detects also its combination with foreign sounds. Under the first modification it strikes the ear like the strong and sonorous breathing of children, into which the action of the trachea greatly enters; and on this account, the present modification is distinguished by M. Laennec by the name of *puerile*, or *tracheal*. It occurs especially in cases in which an entire lung, or a considerable portion of both, is rendered impervious to air, and especially in acute diseases. The modifications of a *weak* or *absent* respiration upon the use of the cylinder indicate a general obstruction in the respiratory organ, and only vary in the degree or extent of such morbid change; and hence, as in the parallel modifications of percussion, they become tests of certain different stages of hydrothorax and peripneumony. The *foreign sounds* with which the cylinder detects the respiration to be occasionally combined, are various kinds of *râle* or *rattle*, to which the inventor of the present method has given the name of *crepitous*, and *subcrepitous*, *mucous*, *sonorous*, *sibilous*. The first or *crepitous rattle*, is denominated from its resembling in sound the crepitation of salt in a heated vessel, or that emitted by frying butter. It is supposed to be a pathognomic sign in peripneumony on its first attack, and occurs sometimes in hæmoptysis. The *subcreptious* is an under-sound of the same kind, and indicates an edematous state of the lungs. The *mucous rattle* is that peculiar kind of stertor called "the dead rattles" by the vulgar of our own country, though in a less degree of intensity. It is produced by a transmission of the breath through fluids accumulated in the trachea or bronchiæ, and measures the extent of such

Use as a test of respiration.

Develops its intensity forming Laennec's puerile or tracheal breathing.

Develops its weakness or absence:

Develops a combination with other sounds: as therattle

Crepitous rattle.

Subcrepitous rattle.

Mucous rattle, or dead rattles of the vulgar:

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accumulation in catarrhal phthisis, hæmoptysis, and other important diseases. The *sonorous* and *sibilous* rattle are of less importance as diagnostics, and exhibit considerable ramifications in their character. The former gives sometimes a loud, and sometimes a deep snore, and sometimes the cooing of a wood-pigeon; the latter consists of a whizzing, or whispering tone, or of chirping like that of birds, often alternately ceasing and renewing its murmur. Both descriptions indicate some partial obstruction of the bronchial tubes; the latter perhaps of the smaller cells.

Sonorous and sibilous rattle.

Develops. the strength and action of the heart in four distinct ways.

But the method of mediate auscultation is also employed to determine the degree of the STRENGTH AND ACTION OF THE HEART. And it is supposed to do this in four distinct ways: by measuring the extent of the pulsation; its shock or impulse; its sound; and its rhythm.

Measures the pulsation as to its extent.

In a healthy person, of moderate stoutness, and well-proportioned heart, the action of this last organ, upon an application of the stethoscope is not found to EXTEND beyond the range of the cardiac region, or the space comprised between the cartilages of the fifth and seventh ribs, and under the lower end of the sternum. It is, however, often traced, in a state of disease, through the whole of the left, or the right side of the chest, as well as in the regions posterior to them: which is generally owing to the feebleness of the heart, and the extenuation of its walls. It may therefore be taken as a general rule, according to M. Laennec, that a perceptible extent of the heart's action is in the direct ratio of its thinness and weakness, or inversely to its substance and power. A wide range of sound is often, indeed, traced when the heart is enlarged; but in this case its walls are morbidly slender; and the enlargement consists in a mere dilatation of its ventricles. And hence this diseased extent of action is often traced in particular kinds of a hypertrophy of the organ.

Measures the pulsation as to impulse.

The heart is also frequently found to be hereby affected in the SHOCK OR IMPULSE of its stroke. The stouter and

thicker the walls of the heart, the more violent is the impulse, insomuch that, as we have already had occasion to observe, the bed-clothes have sometimes been seen to be hereby elevated. This impulse is peculiarly caught hold of by the stethoscope: and is in some cases so energetic as even to lift up the observer's head, and to give an unpleasant shock to his ear. In proper hypertrophies, therefore, or such enlargements of the heart as are opposed to the preceding, in which the natural cavities are not much interfered with, and the augment consists altogether in a thickening of the parietes, we have reason to expect the present effect; which, in like manner, becomes a pathognomic sign of such a disorder, and indicates its existence.

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The stethoscope, also, measures the SOUND of the heart's pulsation. When the action of the heart is peculiarly violent, as in vehement palpitations, the individual himself becomes sensible of a peculiar sound, as well as of an increased impulse; and it has, indeed, in a few rare cases been heard at a distance from the patient's person. Now the application of the stethoscope heightens the sound of the pulsation considerably at all times, insomuch that in its ordinary tenour of health it communicates a certain degree of sonorous vibration which cannot be perceived otherwise; the sound, however, produced by the contraction of the ventricles, and which is accompanied by the stroke of the pulse, being much clearer than that produced by the contraction or systole of the auricles, so that there is at all times to the ear of the experimenter a double or alternate sound, consisting of a louder volume succeeded by a lower. The seat of this double sound, in a state of health, is the cardiac region, to which it is limited; but in a state of disease it spreads much wider, and is heard distinctly in other places. The sound, moreover, varies from the standard of health both in intensity and in hebetude. Where the diameter of the heart is enlarged by a dilatation of its cavities, whilst its walls are weakened and rendered thinner, the sound is loud and distinct; but where, on the contrary, its walls are considerably thicken-

Measures the pulsation as to sound.

Variation of the sound in extent.

Variation of the sound in intensity.

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ed and enlarged, the cavities remaining but little disturbed, the sound is morbidly dull or obscure; and where the same organic thickening exists in considerable excess, the contraction of the ventricles produces a mere shock or impulse without any sound whatever.

Variation of the sound as combined with a peculiar hissing: or with a noise like that of a rasp: or like that of new leather.

The sound moreover is not only varied in its intensity but in its vibration from a natural state. It is sometimes accompanied with a peculiar hissing like that of a pair of bellows, and is in this state either continuous or intermittent, indicating, according to M. Laennec, a spasm or some other temporary and partial obstruction of the first organs of the circulating system. At other times the accompanying noise is like that of a rasp or file; which is always permanent and evinces a permanent obstruction in some of the orifices of the heart. And in one or two instances Dr. Collin has observed it combined with a crackling like that of new leather, which he supposes to be a pathognomic indication of an inflammation of the pericardium, from his having traced this affection in a person who died during its existence.

Measures the pulsation as to its rhythm.

The stethoscope is also supposed to detect in a peculiar degree the RHYTHM or relative duration and succession of the ventricular and auricular contractions. These are sometimes alternated with considerable but irregular intermissions, and sometimes far too rapid in their succession: both which changes from the rhythm of health indicate that kind of organic affection which is dependent upon delicacy of constitution, and is often congenital. They do not however augur the existence of any dangerous or even very serious malady.

General advantages of mediate auscultation.

It appears from this general outline that the method of MEDIATE AUSCULTATION may be advantageously applied in one or all its forms to a detection of various important diseases of the chest, and especially to the different varieties of phthisis: that it may be more generally employed than that of percussion, since corpulescency will seldom prove a bar to its use; and that it is often more definite in its results.

yet often an imperfect guide:

Notwithstanding, however, all the ingenuity that it

evinces, it must often be found an imperfect guide in deciding on the actual state of a disease, or even indicating the disease itself, to say nothing of the long and repeated experience which is absolutely necessary to its being employed with precision. For first, it gives us a very doubtful kind of information concerning the existence of tubercles or vomicæ till they have actually broken, and produced numerous excavations, and consequently is of little use in the earlier stages of the disease. Next, as it has been observed by M. Laennec himself that some persons have an habitually relaxed state of some of the bronchial vessels from hooping-cough or chronic catarrh, or a few minute excavations in the organ of the lungs without any serious deviation from a state of ordinary health; as also that patients occasionally recover from the tubercular species of consumption and have the interior of the hollows or fistulæ hereby produced, not filled up, but lined with a semicartilaginous membrane, thus effecting a natural cure,—the phænomenon of pectoriloquism will here be as distinct as in a morbid state of the pulmonary organ, and consequently may often lead the practitioner astray. And lastly as the stethoscope is limited or nearly so to the ulcerative forms of phthisis, the disease may exist in the catarrhal variety, and still elude its power. For these and other reasons little dependence is placed on this instrument by M. Rostan, and still less by M. Foderé; nor is it likely to obtain a very extensive use in our own country. It has also been employed to ascertain the existence of pregnancy, but with very doubtful success.

and at all times requires long experience.

Exemplified from Laennec himself.

Hence little trusted to by Rostan and others.

Such is the general history of phthisis. The pathology and practice are in a most unsatisfactory and unsettled state: nor can any thing be conceived more contradictory than the writings upon both these subjects. Boerhaave regarded consumption as a local disease, or conversion of all the blood and chyle into pus by means of an erosive ulcer seated in the lungs: Stahl as a general disease unaffected by pus or any other acrimony. The latter ascribed consumption to the very abundant use of bark

Pathology and practice unsatisfactory and unsettled.

View of Boerhaave as opposed to that of Stahl.

Of Stahl, as opposed to that of Morton.

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which was then prevailing in Europe: while Morton regarded bark as his sheet-anchor in effecting a cure. Consumption, according to Brillouet and many other writers, is identic with scrophula, and is only to be cured by tonics, alkalies, corrosive sublimate, or other mercurial alterants employed for the cure of scrophulous affections.* According to Cullen, though it has an apparent connexion with scrophula, the analogy affords us no assistance in the treatment, and the remedies for the one are of no avail in the other.

Of Brillouet as opposed to Cullen.

Of Rush,

Dr. Rush contemplated it for the most part as an entonic or inflammatory disease, and particularly in its first stage, though it is sometimes accompanied with a hectic or even a typhous fever. And hence his principal remedies were salivation, or bleeding, which he sometimes prescribed fifteen times in six weeks, emetics, nitre in large doses, a milk and vegetable diet, walking in cold air even during an hæmoptysis, and afterwards severe exercise. The hardships of a military life, says he, have effected cures in a multitude of cases of confirmed consumption; and a riding post-man has been relieved more than once by the pursuit of his occupation.† This bold practice excited many followers, and was tried with variable success upon a large scale. But a practice of an opposite kind equally bold, and which soon became equally popular, was proposed at the same time by M. Salvadori of Trent.‡ Consumption, in the view of this pathologist, is an atonic instead of an entonic disorder from the beginning, a disease of direct debility and not of inflammation; and hence is only to be cured by an active plan of stimulants and roborants from the first. The patient's diet is to consist of copious meals of meat and wine, and his chief regimen to be that of climbing hills, or precipitous steeps in the morning as quickly as he is

as opposed to Salvadori,

* Journ. de Med. 1777.

† Med. Inquir. and Observ. I. 8vo. Phil. 1789. II. 1793. V. 1802.

‡ Del Morbo-Tisico, 2 Vol. 8vo. Trent, 1787.

able, till he is out of breath and bathed in sweat, and then augmenting the perspiration by placing himself near a large fire. Mr. May, who adopted the same general principle, seems to have postponed the gymnastic part of the process till the symptoms were alleviated, and to have called in the aid of medicines which Salvadori regarded as superfluous. May's medicinal means were emetics, bark, and laudanum, night and morning; and for diet, he prescribed soup, meat, wine, porter, brandy and water, eggs, oysters with proper condiments. Swinging was interposed twice-a-day; and horse-exercise was to complete the cure.*

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Many later writers believe consumption to be very generally produced by a habit of drinking vinegar daily to improve the figure: and Dessault relates a case in which this effect was produced in the course of a month.† Galen recommends vinegar as the best refrigerant we can employ: and Dr. Gregory, in 1794, gave the case of a patient who recovered by using three dozen lemons daily. Dr. Beddoes felt justified in declaring fox-glove a cure for consumption as certain as bark for agues:‡ Dr. Barton affirms he has never known but one case cured by it, though others may have been palliated:§ and Dr. Parr asserts roundly that it is more injurious than beneficial.‖

Of Dessault as opposed to Galen, and Gregory. Of Beddoes as opposed to Barton and Parr.

Contradictory, however, as are these statements with each other, they are chiefly so, as being either too highly coloured or too indiscriminate. We have already considered phthisis under three varieties or modifications, chiefly in respect to its being deeper seated or more superficial; the apostematous lying lowermost, the tubecular somewhat higher, and the catarrhal on the surface.

* Lond. Med. Journ. IX. 1788.

† Sur les Maladies Vénériennes, la Rage, et la Phthisie, 12 Bord. 1739.

‡ Essay on the causes, early signs, and prevention of Pulmonary Consumption, 1799.

§ Collections for a Materia Medica, 8vo. Philadel. 1798.

‖ Med. Dict. in verb. Phthisis. Vol. II. p. 110.

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But each of these, as it occurs in different constitutions, or under different circumstances, may exhibit very different symptoms, and demand a very different, and perhaps an opposite mode of treatment. And hence most of the principles on which the preceding opinions and modes of practice are founded, may derive authority from particular examples of success; and are so far correct, though, perhaps, none of them will apply to the whole. So considerable, indeed, are the shades of distinction from this multiplicity of causes that every separate case of consumption should be allowed to speak for itself, and must call for much deviation from the widest line of treatment we can ever propose to ourselves under the form of general rules.

These contradictory views capable of approximation: as the disease evinces different varieties, and in different habits may require very different modes of treatment.

The continuance of the disease when once produced may depend, as we took occasion to observe when discussing the nature of hectic fever,* on the state of the constitution, or on the local irritation; for the hectic may be kept up by either, and so long as this continues we can have no expectation of recovery. In the first place, the local irritation may be small, while the constitution itself is bad, and does not dispose the parts to a healing condition. And, secondly, the constitution may be good, while the local irritation is so considerable that there is not remedial power enough in the former to subdue it. How far both these principles have been kept in view by pathologists at large, in their treatment of phthisis it is difficult to determine, though they ought never to be lost sight of: yet the general intentions by which they seem to have been guided, in the midst of all the contrariety of practice we have just noticed, are the following:

Hence every separate case should speak for itself; and lay down its own practice.

Fundamental principles to be attended to in the treatment.

General intentions that have hitherto guided pathologists.

I. To take off inflammatory action.
II. To correct the specific acrimony.
III. To support under debility.

* See Epanetus Hectica, Vol II. p. 206.

IV. To subdue the local irritation and improve the secretion.

V. To excite a change of action.

GEN. III. SPEC. V. Marasmus Phthisis. Consumption. Treatment.

I. If the patient be of a robust habit and in the prime and vigour of life, and if the symptoms indicate considerable inflammation, whether in the lungs or bronchiæ, such as, in the former case, fixed pain and weight in the chest, increased by lying on one side, with a dry but troublesome cough; and in the latter, a general soreness rather than pain in the chest, frequent and violent cough with a copious excretion of a thin, offensive, and purulent mucus; and, in both cases, with a full and strong pulse, the fever though remissive, making an approach towards a cauma, constituting the plethoric species of M. Portal, and the inflammatory of Dr. Rush, there can be no question that our object in both these cases should be to diminish the vascular action by every mean in our power. Copious bleeding by venesection should be had recourse to with all speed: and though we shall seldom be called upon so closely to follow the steps of Dr. Dover as to repeat the operation fifty times in succession* before we desist, it may be necessary to follow it up rapidly to the third, fourth or fifth time. M. Portal, in the catarrhal variety, bled a man, seventy-eight years old, three times with the happiest effect. Immediately after the use of the lancet, we should employ small doses of ipecacuan or antimonial powder, so as to maintain a nausea till the pulse is lowered. Where the symptoms approach to peripneumony, the latter is to be preferred; where they lean to an inflammation of the mucous membrane of the bronchiæ, the former, of which three or four grains may be given three or four times a-day, and will often prove expectorant, and unload the mucous follicles of the air-cells. The bowels should, in the mean time, be thoroughly opened by neutral salts or uniting three or

First intention: to take off inflammatory action.

When the habit is robust, and the symptoms severe,

the actively reducent plan may be expedient and imperative.

Bleeding.

Nauseating.

Aperients.

Digitalis.

* Ancient Physician's Legacy to his Country, 8vo. Lond.

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four grains of calomel with the nauseating powder: and after this the fox-glove may be had recourse to with a considerable promise of success. Von Helmont first employed this last medicine as a specific for scrophula: but the only specific influence we know it to possess is on the kidneys, and on the action of the heart and arteries. It is for this last effect that we look to it in the present instance; the only effect in all probability that renders it of any advantage in consumption. In catarrhal phthisis it seems sometimes, however, to improve the character of the exspuition, and to render it less thin and acrid: but this is, perhaps, a collateral result of the diminished action of the arterial system: for an increased flow of genuine mucus, like that of genuine pus, depends upon only a small augmentation of vascular energy: since, if the vessels be urged beyond this, the secretion is hot, watery, and acrimonious.

Sudorifics.

If sudorifics be ever advisable in any modification of phthisis, it is here we may expect to find them of use. Bennet indulged the hectic morning-sweats as a mean of abating the symptoms, and Moreton observes that nothing is gained by checking them. But it is perfectly clear that they very greatly add to the debility, and never prove critical. It has been proposed by others, however, to overcome the morbid sweats by exciting a sweat of a different kind: "for it is as practicable," says Mr. Watt, "to cure sweating by sudorifics, as diarrhœa by cathartics."* There is something plausible in this remark, and the experiment might, perhaps, be allowed to form a part of the reducent plan before us. But the author has never tried it, and even in the state of the disease we are now contemplating, he would prefer mild diaphoretics or relaxants to drastic sudorifics.

Mild diaphoresis preferable to drastic sweating, afterwards cooling neutrals:

When a sufficient inroad has thus been made upon the inflammatory diathesis, we may content ourselves with an administration of the cooling neutrals, of which nitre

* Cases of Diabetes, Consumption, &c. 8vo. Paisley. 1808

is one of the best. It may be given in almond-emulsion in the proportion of a scruple to half a pint; and, if the cough be still troublesome, may be conveniently united with some light narcotic, as the extract of hyoscyamus or white poppy. The diet and general regimen are points of great importance; but upon these we shall have to speak presently.

GEN. III. SPEC. V. Marasmus Phthisis. Consumption. Treatment. First intention. and when necessary narcotics.

It is not often, however, that phthisis commences with the inflammatory action we have thus far contemplated.* Its ordinary march is unostentatious and insidious; and it takes possession of the fair and delicate, rather than of the firm and athletic frame, and chiefly in those possessing this figure who can trace it in their ancestors and have hence reason to apprehend an hereditary taint.

Phthisis rarely thus violent in its attack.

II. Of the proximate cause of this predisponent diathesis we know nothing: it is generally supposed to have a near analogy to that of scrophula; and when called into action it commonly shows itself in the form of the tubercular variety: the tubercles themselves, though not occurring in a structure strictly glandular, bearing a considerable resemblance to scrophulous indurations. And, on this accourt, as there are various medicines, and a particular regimen that seem to have a beneficial effect upon a scrophulous habit, the same have been often resorted to for the cure of consumption. Thus, sea-water, the alkalies, almost all the metallic salts, and especially those of mercury, have been repeatedly tried, but apparently with very doubtful success. Mr. Spaldin, in the American Medical Repository, gives the case of a patient who had taken nearly two pounds of potash and soda, intermixed like common salt, with his ordinary food; and, he states with considerable benefit, after fox-glove, sulphuric acid and bitters had been successively found to disagree;† and Dr. Trotter affirms that among seamen

Second curative intention. To correct the specific acrimony

How far the specific treatment for scrophula applicable to the tubercular variety.

* See Epanetus Hectica, Vol. II. p. 210.

† Vol. v. p. 220.

GEN. III. SPEC. V. Marasmus Phthisis. Consumption. Treatment. Second intention.

in scrophulus consumption, as he calls the tubercular, salt and salt diet have proved of eminent service, but that the most effectual remedy is cinchona with sulphur.* Yet though serviceable in particular cases of tubercular consumption, this class of medicines is far less efficacious than in strumous affections; and the remark of Dr. Cullen, which he has confined to two or three varieties of them, may be extended to the whole. "In scrophula," says he, "the remedies that are seemingly of most power are sea-water and certain mineral waters, but these have generally proved hurtful in the case of tubercles of the lungs. I have known," he adds, "several instances of mercury very fully employed for certain diseases in persons who were supposed at the time to have tubercles formed, or forming in their lungs: but though the mercury proved a cure for those other diseases, it was of no service in preventing phthisis, and in some cases seemed to hurry it on."†

Alkalies. Muriate of soda. Cinchona with sulphur. Mercury.

Metallic salts tried generally but without success.

Nor have any other metallic salts been of more use than those of mercury. Dr. Roberts has had the spirit and perseverance to run through the whole range of such of them as can in any way be thought applicable to this complaint; and has also had the candour, after a sufficient scale of trial in St. Bartholomew's, a candour how seldom to be met with, to confess that none of them were administered with success. The experimented list consisted of silver in its nitrate; lead in its superacetate, combined with opium for counteracting its deleterious effects; zinc, in its sulphate and oxyde; and the precipitate from the sulphate of potash, combined with myrrh; arsenic in the neutral salt formed by a combination with potash; manganese in its white oxyde, in doses of ten grains every six hours; cobalt in its black oxyde, in doses of from one grain to four; ammoniated copper; and muriate of barytes. And with a like want of success, he

Of silver: Lead: Zinc: Arsenic: Manganese: Cobalt: Copper: Barytes:

* Medicina Nautica, Vol. III. p. 359.

† Pract. of Phys. Vol. II. Sect. DCCCCVII. p. 293.

tells us in addition, were employed the vegetable narcotics, aconite, hyoscyamus, stramonium, belladonna, as also toxicodendron.* We may hence, I think, nearly conclude with Dr. Cullen, that, "the analogy of scrophula gives no assistance in this matter."† And it is probably on this account that M. de Foderé has treated of tubercular and scrophulous consumption as two distinct forms of the disease.‡

Treatment.

Second intention.

Vegetable narcotics.

The preparations of iodine have a fair claim to attention here as well as in scrophula; though, as we shall afterwards have occasion to observe,§ great caution is necessary in employing them; while it is only where the affection is pretty evidently tubercular that we have any reason to expect success from their use; and even here, only in an incipient state of this variety. I have found a local application of the ointment relieve the cough and pain in the side in some cases more effectually and more permanently than the tartar emetic eruption. And if the erythema hereby produced should prevent a continuance of the application,‖ we may substitute the form of pills or of tincture; giving half a grain of the iodine in either mode of preparation, two or three times a-day.

Iodine.

This part of our subject, however, ought not to be closed without briefly adverting to the practice which has lately been adopted by some pathologists, of giving very small doses of antimony in the form of tartar emetic dissolved in a large body of some simple menstruum and continuing it for an almost indefinite period of time: but whether this be recommended with a view of destroying any specific acrimony, or of allaying general irritation, I cannot determine. Dr. Balfour dissolves two grains of the emetic tartar in six ounces of water, and prescribes an ounce of this mixture, that is, a third part of a grain

Tartarized antimony in diluted doses:

as prescribed by Balfour:

* Med. Trans. Vol. IV. p. 129.

† Pract. of Phys. Vol. II. Sect. DCCCCVII.

‡ Leçons sur les Epidemies et l'Hygiene Publique. Tom. II. Paris, 1823.

§ Vol. V. p. 315.

‖ For its other troublesome effects, see Vol. V. Cl. VI. Ord. I. Gen. II. Spec. I. Emphyma. Sarcoma Bronchocele. p. 315.

GEN. III. SPEC. V. Marasmus Phthisis. Consumption. Treatment. Second intention. by Lenthois.

of the tartarized antimony, to be taken every hour, and a smaller quantity where this is found to nauseate. M. Lenthois, in his Methode Preservatif, apparently with a view of imitating the great processes of nature in her manufacture of those metallic and other mineral waters which have been taken with most success, gives it in a far more divided state, and consequently with a much larger quantity of menstruum. He first dissolves a grain of tartarized antimony in eight table spoonfuls of distilled water, and then adds to the entire mixture six or eight pints of water in addition, and sometimes not less than twelve. The solution thus weakened is employed by the patient for common drink in every case and stage of consumption, either alone or with some other drink at meals, or occasionally with wine; it is taken without limitation at all seasons and hours.

How far this method may answer I cannot say from personal practice: but the success of M. Lenthois is rendered suspicious from its pretended extent; for he hereby prevents the disease, as he tells us, if it be not begun, and cures three out of four where it is.

Third curative intention. To support under debility.

III. But though in consumption we can avail ourselves but little of the treatment that applies to scrophula, and know nothing whatever of the nature of its specific acrimony or miasm, we see enough to convince us that consumption, in its general character is, like scrophula, a disease of debility: and that wherever it exhibits an excess of vascular action, it is merely in consequence of being planted upon a plethoric or entonic temperament. And hence another principle, conspicuous in most of the remedial plans to which it has given birth, is that of supporting the system while labouring under its influence.

An important principle, but of difficult application. By Salvadori carried to an extreme, and since by Stewart.

This principle is well founded, but of difficult application; and, like the opposite principle of reduction, has been often carried to an extreme. During the last century Salvadori in the Tyrol, and in the present day Dr. Stewart of Edinburgh, are justly chargeable with having done this by a very general allowance of nourishing diet

in conjunction with pure or diluted wine, bark, steel, and other tonics; exercise on horseback, and affusion with vinegar and cold water. In its ordinary course, the disease itself is not only peculiarly prodigal of animal strength, but peculiarly protracted in its duration, while the fever, though remissive, rarely subsides altogether, or allows any interval of which we can avail ourselves.

GEN. III. SPEC. V. Marasmus Phthisis. Consumption. Treatment. Third intention.

In some instances, however, it does allow such interval, and especially where it has continued for a long period, and has broken down the general vigour of the frame; in which case Moreton occasionally found the inflammatory form, with which it commenced, converted into a low intermittent, sometimes assuming the quotidian, but more generally the tertian type; beginning with cold fits, and succeeded by intense heat and profuse sweats which exhausted the patient, though they left him in high spirits during the intermissions.* And in such instances, it is possible that the tonic and stimulant plan of bark, wine, and even high-seasoned dishes, with cold air, cold bathing, and active exercise, so warmly eulogized by the writers just referred to, as well as by many others, may occasionally prove successful; and particularly where the disease is of the apostematous or catarrhal variety, and there is no constitutional taint to oppose at the same time. And it is here also, if any where, that the bustling and violent exercise so strenuously recommended by Dr. Rush and Dr. Jackson have a chance of proving beneficial. Dr. Chisholm tells us that in particular cases he has found both these plans of decided service: the cold affusion in the case of a near relative of eighteen years of age, on whom it was employed with great caution, the fluid, consisting of vinegar and water, being first applied moderately warm, and only to the chest and arms, by a sponge, and afterwards gradually extended over the body, and of a descending temperature, till at length it was used cold, and the mixture exchanged for water alone.

In some instances the remissive intervals nearly apyrectic: and the hectic converted into an intermittent.

Direct tonics may have been here sometimes employed with success.

Chisholm's success with cold affusion.

* See Epanetus Hectica, Vol. II. p. 210.

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The beneficial result of hard exercise in the case referred to is still more striking. The patient was a serjeant, captured among others by the army of Hyder Alley, and though labouring under the worst symptoms of phthisis, and suffering at the same time from colliquative diarrhœa, was compelled to keep up, in a hurried march, with the other prisoners, at the point of the bayonet. After the first two or three days, the serjeant, who had hitherto almost sunk at every step, became more able to march; and, before his arrival at the place of destination, all the symptoms of his disease vanished. A scanty allowance of rice was his only food.*

With hard exercise.

But this must not form a general practice; and must often yield to another course.

But these are plans which cannot be brought into general practice; and, in supporting the strength of the system, we are ordinarily compelled to pursue a very different course: a doctrine in a few rare instances admitted even by Dr. Stewart himself.

The strength may be supported by negative means.

The first mean by which we are to aim at accomplishing this is of a negative kind; and consists in saving the frame as much as possible from the profuse exhaustion it is daily sustaining, by calming the febrile irritation, and checking the colliquative sweats, which, as already observed, are never of a critical kind.

"I have sometimes succeeded very decidedly," says Dr. Young in a note to the author, while the first edition was printing, "in checking the sweats by Dover's powder: but I do not know that the progress of the disease has been much retarded by this palliation."

Bleeding rarely allowable in a delicate frame.

Bleeding, however plausible, and even advantageous when the pulse is full and strong, and the pain in the side acute, can rarely be allowed when the frame is delicate and irritable, and the pulse small and weak. Where the local distress is considerable, it may be had recourse to as a palliative, but never carried beyond a few ounces, nor repeated without great hesitation.

Emetics less objectionable:

To emetics there is less objection, but vomiting is here

* Climate and Diseases of Tropical Countries, &c. 8vo. p. 112. Lond. 1822.

to be preferred to nauseating. The latter, though it lowers the pulse, produces considerable fatigue and distress. The former emulges the bronchial glands, and diminishes the local irritation by transferring it through the means of a general glow and moisture over the system at large. The dose may be repeated three or four times a week, and should have its power limited as nearly as may be to a single inversion of the stomach.

Treatment. Third intention. and vomiting preferable to nauseating.

In the selection of emetics some judgement is required, for those should be carefully avoided, which, like the antimonial preparations, produce loose evacuations, and excite considerable sweating. The ipecacuan is perhaps one of the simplest and the best. Dr. Simmons, however, preferred the sulphate of copper, giving first of all half a pint of water to the patient, and then the blue vitriol from two grains to twenty, according to his age and strength, dissolved in an additional cup-full of water. In general, he found that the moment the emetic reached the stomach it was thrown up again, upon which the patient was ordered to swallow another half pint of water: which was sufficient to take off the nausea.*

Emetics to be selected with judgement.

The reason that prohibits nauseating, prohibits also the use of fox-glove: for, though the pulse may be diminished, nothing more is obtained, and even this is obtained at too great an expense of sensorial power in the degree of debility we are now contemplating: and the remark will apply to most of the narcotics, whether of the umbellate or solanaceous order. The neutral salts answer better, and especially nitre; and there is no modification of the disease in which this may not be given, and will not prove an excellent refrigerant as well as sedative. The general error, however, has been in administering it too freely, as in doses of fifteen grains or a scruple: in which case, it becomes a direct irritant, and does much more harm than good. Seven or eight grains at a time, as already observed, is a far better proportion, and even

Fox-glove objectionable in delicate and irritable habits: as are most of the narcotic umbellatæ and solanaceæ. Neutral salts useful: but should be given considerably diluted.

* Practical Observations on the Treatment of Consumption, &c.

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in this quantity it will answer best if considerably diluted. It is often united with narcotics; but these are never found of use unless to palliate the cough or local distress; for otherwise they increase the heat and quicken the pulse.

Acids often highly serviceable.

Most of the acids may also be employed for the same purpose, and with equally good effect. They may, indeed, be regarded in the joint character of sedatives, refrigerants, and astringent tonics: and have hence every claim to attention. The mineral have been most commonly in use; but, from their erosive quality, they cannot be thrown in sufficient abundance into the circulating fluids: and on this account the vegetable are to be preferred; and, of the vegetable, the fermented acids, which, though somewhat less grateful than the native, seem to be more effectual as tonics. The acetous acid was employed freely by Galen, diluted with water, who regarded it as the best refrigerant we can select. It is continued to the present day among the Moorish physicians at Tunis, and, according to the late M. Orban, with decided success. He observed its effects, during three months, upon one patient who appeared to be labouring under a confirmed phthisis from a neglected catarrh. The quantity of vinegar drunk in the course of every twenty-four hours was seven fluid-ounces intermixed with seven times as much rain-water, and sweetened with two ounces of refined sugar. This apozem was accompanied with astringent and tonic pills composed chiefly of alum and sulphate of iron, of each of which two grains and a half were taken daily. The diet allowed was very slender, and consisted of nothing more than vermicelli or millet, boiled in water, and seasoned with a little oil and salt. Of this, only two meals in the four and twenty hours were allowed for several weeks. And, on the patient's becoming very costive under its use, the Moorish physician paid no attention to the symptom, but told M. Orban, that a constipated state of the bowels was the best symptom that could occur, and that the more strikingly

Vegetable preferable to mineral,

especially the fermented.

Acetous employed by Galen,

still employed by the Moorish physicians.

Its success as observed by Orban.

this prevailed the more certain he was of a cure. M. Orban left this patient in a state of convalescence bordering on perfect health; and, on his return to France, pursued the same plan, with the exception of the iron, which he omitted as too stimulant, and found it, in many cases, eminently successful, though not in all.* It has since been tried in our own country and has often proved equally advantageous. Dr. Roberts has paid particular attention to its effects; and, upon a pretty extensive scale, has been satisfied with them. One of his cases was of a very unpromising aspect; and consisted of a young gentleman, seventeen years of age, whose elder brother had died of phthisis two years before. The cough, which, in the morning was very considerable, was accompanied with expectoration sometimes streaked with blood; a confirmed hectic preyed upon him, and the night sweat was so profuse that his hair was drenched with it. "My patient," says Dr. Roberts, "was *at once* relieved by the use of the acid, and, in a short time, so lost his complaints, that, by my advice, he discontinued the remedy."† The acetic and acetous acid seem to have been employed indiscriminately; over which the citric, which was also tried, did not seem to have any advantage. The acetous was usually given in half-ounce doses with an ounce of infusion of cascarilla, and a little mucilaginous powder or syrup, the dose being repeated three or four times a day.

GEN. III. SPEC. V. Marasmus Phthisis. Consumption. Treatment. Third intention. Tried with success by Orban himself. In our own country by Roberts.

From these facts, as well as from a host of others of the same kind that might be adduced, the acetous acid appears to be a powerful sedative. It diminishes action generally, checks night-sweats, restrains hæmoptysis, retards the pulse, and produces costiveness. It becomes, hence necessarily a refrigerant; and it is probable that its refrigerant depends entirely upon its sedative power. That it is also an active astringent is known to every one; but this seems to be a distinct quality; for simple astringents, as bistort and catechu have no pretensions to be sedative;

Summary of its beneficial effects.

* Med. Trans. Vol. v. Art. XVIII. † Med. Trans. ut suprà.

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and the metallic salts, with the exception of those of lead, are directly stimulant. On account of this sedative quality, vinegar, when drunk in abundance, where there is no morbid excitement to suppress, becomes often highly mischievous: for, by unduly taking off the action of the assimilating powers, it prevents the secretion both of flesh and animal oil, and hence produces emaciation or a slender form; and is at times expressly resorted to for this very purpose by young and thoughtless females who are afraid of becoming too corpulent. This effect also is often ascribed to its astringent quality, yet improperly; for it is the character of astringents to increase the solid contents of the frame, and give breadth as well as firmness to the muscles. In hæmoptysis, I have carried the use of acetous acid much farther than was prescribed by Dr. Roberts, and with manifest and unmixed advantage.

Treatment. Third intention. Mischievous where no morbid excitement: and why.

Proper astringents rarely serviceable.

The proper astringents have also not unfrequently been employed in phthisis for the same negative purpose of producing strength by checking the exhausting discharges of sweat, pus or mucus, blood, and often diarrhœa; but they have rarely proved successful. Some degree of benefit seems occasionally to have been derived from the use of oak-bark, several of the agarics* given in the form of lozenges, and the acetate of lead;† but they have far more generally been employed without success or with more mischief than advantage.

Exemplified in oak-bark: agarics: lead.

Tonics combining an astringent and a bitter principle,

The most direct means of supporting the system would be by those tonics that unite an astringent with a bitter principle; but we have already observed that the system is usually, and particularly in the beginning and at the height of the disease, in too high a degree of irritation for a convenient use of any medicines of this kind: though where the complaint has lasted for many months, and appears to be rather of the tubercular, or catarrhal, than

more useful in a late stage of the disease than at the beginning.

* De Haen, Rat. Med. Tom. II. 567.—Dufresnoy, in Corvisart, Journ. Med. Cent. VII. 531. 1804.

† Ewell in Sédile, Journ. Gen. Med. XLIV.—Hildebrand. id. XXXVI.

of the apostematous variety, these may sometimes be employed with great success. The Angustura bark generally agrees better than the cinchona, and to this myrrh and iron may at such times be added in increasing doses, and particularly as prepared in the mistura ferri composita of the London College. In the tubercular variety, the cinchona seldom agrees in any stage: Dr. Cullen conceives never; and tells us that even where the disease has assumed something of an intermittent character, quotidian or tertian, and he has, on this account, been tempted to try it in free doses, he has in no instances succeeded so as to establish a complete cure. "For in spite," says he, "of large exhibitions of the bark, the paroxysms in less than a fortnight or three weeks after they had been stopped, always returned, and with greater violence, and proved fatal." In the latter stages of the apostematous variety, and especially where the vomicæ are small and in perpetual succession, he thinks, however, it may be of service, in restoring a healthy action, and promoting a secretion of genuine pus.

Third intention.

Angustura bark often agrees and especially in the tubercular variety: the cinchona seldom or never.

In this last case, and here perhaps only, we may venture with success on the use of the cold bath. In a more irritable state or stage of the complaint, the tepid bath may occasionally prove serviceable; and, where it does so, should be repeated three or four times a week, or even oftener. Of the effect of the *banos de tierra* of the once celebrated Solano de Luque I cannot speak from personal knowledge. It consists in burying the patient up to the chin in fresh mould. It would be most obvious to suppose that this was designed to act as a tonic, and check the undue tendency to perspiration by a protracted chill, but that Van Swieten tells us the smell of fresh earth is serviceable, and approves of it on this account. It has since been recommended by Dr. Simmons and M. Ponteau.

Cold bath.

Banos de tierra or earth-bath.

Before, however, the hectic, or the general irritability of the system has so far subsided as to render tonics ad-

Diet and regimen.

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visable, our chief dependence for giving support to the system must be upon diet and regimen.

Treatment.

The diet should be of the lightest kinds, and in very small proportion, or with long intervals of rest; for some degree of exacerbation, in the stage of the disease we are now contemplating, is always produced by the process of digestion. Under limosis *expers* we have already seen how very small a portion of food is necessary for the support of life, when neither mental nor muscular exercise are made use of; and, though hectic fever itself is a source of very great exhaustion, this exhaustion will be less in proportion as we produce less exci ement, whether from eating or any other cause. And hence the most cautious physicians, from the time of the Greeks to our own day, have concurred in recommending food in small quantity as well as of the lightest materials. It is not merely the stomach and its collatitious organs that are hereby put at rest, but the circulating system, the assimilating powers, the brain, and the intestines. And hence there was much judgement in the remark of the Moorish physician to M. Orban in the case just adverted to, in which the diet was peculiarly reduced and slender, that costiveness, so far from being an evil, was one of the most promising symptoms that could occur, and which rarely required any attention. It gives proof in reality, that the secernents of the larger intestines are quiescent, that the lacteals have absorbed nearly the whole of the materials introduced into the stomach, and that there is scarcely any refuse matter to irritate afterwards, or be carried off in the form of feces.

Third intention.

Food light and with long intervals.

Food principally milk and the farina of plants.

The food itself should consist principally of milk and the farinaceous parts of plants, if it be not limited entirely to these: and upon a diet of this kind, in conjunction with temperate air and exercise, the Greek physicians placed their only hopes of a cure. Whether it be necessary to pay that strict attention to the different kinds of milk which we find in many writers of established repu-

What milk most nutritious and least heating.

tuation I cannot fully determine. Galen recommends woman's milk, as lightest of all, then ass's, next goat's or ewe's, and lastly cow's;* and Van Swieten adopts the recommendation of Galen.† Mare's milk has since been proposed as preferable to all these: but the analyses published by different chemists vary so much from each other, that it is difficult to come to a conclusion. If the experiments of Stipriaan may be depended upon, mare's milk contains most sugar and least cream, butter or caseous matter; and woman's milk most sugar and least butter and caseous matter next to mare's, with most cream next to sheep's.‡ Whence mare's milk should be the lightest of the whole, but less nutritive than woman's. According to Parmentier, however, ass's milk contains a less proportion of caseous matter than any of the rest.

Analyses of Stipriaan.

Peculiar properties may sometimes be given to milk by the food fed upon; and hence Galen endeavoured to render it more astringent by placing the animal, that was to furnish it, in pasturage, enriched for the purpose with agrostis, lotus, polygonum, and melyssophyllum. And as the patient became convalescent, and could bear a richer nutriment, he was allowed to sail down the Tiber and use the cow's milk of Stabiæ, which was peculiarly celebrated for its excellence.

Peculiar properties of milk communicable by the food fed upon.

When ass's milk cannot conveniently be obtained, its place may be supplied with what has been called artificial ass's milk, which is a mixture of cow's milk and animal mucilage, diluted in a farinaceous apozem, rendered slightly sweetish and aromatic by eryngo. The ordinary form consists in boiling eighteen contused snails with an ounce of hartshorn-shavings, of eryngo-root and pearl-barley, in six pints of water to half its quantity, and then adding an ounce and a half of syrup of

Artificial ass's milk.

* Opp. Tom. VI. 130, 131. edit. Basil. 1542.

† Comment. Tom. IV. Sect. 1211. edit. Lugd. Bat. 1764.

‡ See Crell's Chemische Annales, 1 VIII. p. 138. 1794

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Tolu. Four ounces of this are usually taken morning and evening with an equal quantity of fresh milk from the cow.*

Treatment. Third intention.

The chief foods which have been allowed in the general treatment of consumption in its earlier and middle stages, in conjunction with milk and the farinacea, are

Vegetable mucilages.

the vegetable and animal mucilages, but particularly the former. And of these that obtained from the Iceland

Liverwort.

liverwort, has been held, and deservedly so, in the highest degree of estimation; for to an aliment of sufficient nourishment it adds a tonic power by its bitterness; yet a power that so far from increasing vascular action seems rather to quiet it; as though the bitter principle were itself in possession of something of the sedative quality of the hop, Ignatius's bean, or some other plant that decisively unites the two.

Were it not, however, that every thing seems to be valued in proportion to the distance of its growth and the difficulty and expense of acquiring it, it would not be necessary for us to go the Arctic circle in quest of liverworts, as there are several species indigenous to our own country that have all the good qualities of that of Iceland, and

Various indigenous liverworts may be employed as substitutes.

in an equal degree: particularly the lichen *cocciferus* or *pyxidatus*, commonly known by the name of cup-moss. This was long ago recommended in hooping-cough by Willis; as it has since been employed in hectic affections by Strack; and by Van Woensel in both phthisis and hooping-cough, and apparently with considerable success.† The lichen *pulmonarius*, lung-wort or lung-moss, common to most parts of Europe, and our own country among the rest, has also occasionally been made use of for the same purposes. It is, however, less mucilaginous than several other species, and so bitter as to be disagreeable to the palate, and in some places, and especially in the Siberian variety, to be employed as a sub-

* Med. Trans. Vol. II. p. 341.

† Hist. de la Société Royale de Médicine. II. 295.

stitute for hops. It requires on this account a longer maceration in water for extracting the bitter principle before it is used.

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In supporting or recruiting the strength, a due attention to air and exercise is also of high importance. The advantages offered by the first are those of a mild, dry, and equable atmosphere; and probably these are the whole. If the patient's own country give him these, he need not wander from home. If it do not, he must create an artificial atmosphere in his own chamber, or set of chambers, by keeping the thermometer at from 60° to 65° of Fahrenheit, and confining himself to this temperature; or he must seek the atmosphere he stands in need of in a foreign climate. The disadvantage of the former is that though he may support the requisite temperature, he cannot conveniently obtain a sufficient change of air, nor so well avail himself of the various exercises that might be useful to him, as if he were at liberty to go abroad.

Treatment. Third intention. Mild, dry and equable atmosphere. Produced artificially.

Hence a change of abode has been recommended in all ages to those whose native soil is subject to considerable and sudden atmospherical variations, though pathologists have by no means agreed upon a meteorological standard. For the patient's residence in our own country, the south-western boundary of the Cornish coast, and particularly Penzance, seems to offer the best asylum; and where a foreign climate is recommended, it should lie between thirty and forty degrees of latitude; if lower than this, the disease, and especially where ulceration has taken place, seems to be exacerbated instead of diminished; and consequently its fatal issue to be quickened;* notwithstanding that to the natives consumption is little known within the tropics.

Obtained bya change of residence.

Latitudes best adapted.

In Great Britain the annual mortality from this disease in 1811, when the population was calculated at 23,353,000, seems to have amounted to 55,000 being a

* Sir G. Blane, Observations on the Diseases of Seamen, 8vo. 1785.

GEN. III. SPEC. V. Marasmus Phthisis. Consumption. Treatment. Third intention. Often tried in vain from being tried too late. Hence almost every plan disapproved of by many pathologists.

proportion of 1 in 224. In Geneva, from a very exact register M. Prevost Moulton estimates it at 1 in 521.*

Generally speaking, however, a change of climate or of local situation has been determined upon too late; and hence has not been attended with all the benefit that might otherwise have been reasonably hoped for. On which account, many pathologists have considered it as of little importance, if not more injurious than staying at home, though the most celebrated spots should be selected.

Thus Dr. Carmichael Smyth asserts that Madeira is unfavourable to the consumptive when the lungs are materially injured, notwithstanding the mildness and equability of its climate.† Nice and Naples are said to be equally unfriendly from the neighbourhood of mountains; and Dr. Southey's inquiry has led him to conclude that in Malta, Sicily, and other islands in the Mediterranean, phthisis, though a rare disease among the natives, does not appear to be retarded in those who visit them for a cure.‡ M. Portal dissuades from all such trials by affirming that there is no dependance to be placed upon them, since he has seen the disease accelerated in Englishmen, or those of other northern nations, by a visit in quest of milder air to the south of France; whilst in the natives of Languedoc or Provence it has been restrained by a removal to Paris.§ Nor are the observations of M. Foderé much more encouraging to a trial of any part of France: as he expressly tells us that, in the provinces on the borders of the Mediterranean, phthisis commits the most horrible ravages, while out of 62,447 deaths which took place at Paris in the years 1816, 1817 and 1818, thirteen thousand eight hundred and eighteen fell victims to diseases of the chest.‖

* Chisholm, on Tropical Climates, p. 234.

† Account of the Effects of Swinging in Pulmonary Consumption, &c. 8vo. 1787.

‡ Observations on Pulmonary Consumption, 8vo. 1814.

§ Observations sur la Nature et le Traitement de la Phthisie Pulmonaire, II. p. 358.

‖ Leçons sur les Epidemies et l'Hygiene Publique, Tom. II. 1813.

The whole of this, however, only shows us that very great care is necessary in determining concerning the state and stage of the disease, the patient's constitution, and the local features of the situation that may be proposed for his residence: and we have already shown how it is possible for a mild and relaxing climate to prove remedial to strangers, while it may even become a predisponent cause of phthisis to natives. Where, in the commencement of the disease, there is great irritability, or an inflammatory diathesis; or, in its advance, the strength of the constitution is greatly reduced; and especially where an obstinate diarrhœa has supervened, the fatigues of journeying and of a sea-voyage, and the necessary relinquishment of many of those minuter, but still important, conveniences, to which the patient has been accustomed at home, will more than counterbalance for all the advantages he might derive from the possession of a milder and more equable atmosphere.

Great judgment necessary in adjusting the proper situation to the state and stage of the disease, and the patient's constitution.

The topography of the situation about to be chosen is of equal importance; for if it be strongly marked by lofty cliffs or mountains, the air will seldom circulate freely, but rush in currents in some parts, and be obstructed and become stagnant in others. Such is the state of Hastings on the Sussex coast of our own country, which would otherwise form an excellent asylum for those who are subject to pulmonary affections, and cannot remove far from their native abodes. The shore is skirted by two enormous cliffs of sand-stone that rise between two and three hundred feet in perpendicular height. The old town is built in a deep ravine opening towards the north-east, that lies between them, and the new town immediately under the cliffs, fronting south and west; and hence, while the air is rushing in a perpetual current through the former, it becomes stagnant, heated and suffocative in the latter. On this account, it has been uniformly found that small islands without any great boldness of feature, enjoy the most equable temperature, and, when within the range already pointed out, form the most favorable situations

Residence not advisable where high cliffs or mountains.

Topography of Hastings.

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for consumptive cases. Madeira, in some of its positions, is one of the best foreign stations in the winter season; but from its mountainous face, and the snow, sleet, and cold winds to which it is occasionally liable, catarrhal affections, and even genuine consumption itself, are, according to Dr. Gourlay, not uncommon to the natives; and in removing to it, therefore, it will be necessary to select a spot of sufficient elevation, and equally sheltered from the meteorological evils of currents, tempests, and suffocative heat. And, however fortunate a patient may be in procuring such a residence at Madeira, he will, in all probability, succeed still better, and obtain a greater choice of desirable situations at Nice, Pisa, or even Hières; and might be more comfortable at Villa Franca than even at any of these, if the town were now of sufficient extent and population to offer him the conveniences he will always want, and especially that of a roomy and excellent lodging-house, which, in the present decayed state of this town, is not a little difficult to be obtained. The depth of the bay, and the very abrupt elevation of the hills that rise in a most beautiful and romantic amphitheatre behind it, enable the patient to make a considerable range without exposure to sudden currents. The east is its only unsheltered quarter, and, from the evils attendant on occasional chills, he must sedulously avoid this.

Madeira the best foreign winter station.

Nice, Pisa, Hières, Villa Franca.

Where the disease occurs in hot climates a cooler temperature to be sought for.

But we have already shown that a high degree of heat habitually applied to the body, as in inter-tropical regions, as a source of debility and irritation, may itself call forth a latent consumptive predisposition into action, and become a source of phthisis as well as a temperature of unfriendly cold. The variety in this case, as we have already observed, is almost always the tubercular, and often combined with a strumous diathesis, if it do not originate from it. The change must here, therefore, be to a cooler instead of to a warmer temperature; to an atmosphere of a more refreshing and invigorating power; to a climate still mild, but less exciting, equable in its thermometer, and tonic in its general influence.

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After all, the most equable of temperatures is that of the sea itself: and hence many patients, who feel inconvenience from a residence on the sea-side, are almost instantly relieved by sailing at a few miles distance from it. This has often been resolved into the exercise of sailing, or the sea-sickness which in many instances is hereby excited. It is, nevertheless, a distinct advantage from either, and resolvable into the explanation just stated.

Temperature of sea-air itself the most equable: and hence often found peculiarly beneficial without sea-sickness. Sea-sickness often serviceable.

Sea-sickness, however, is of unquestionable service in many cases: and particularly in those in which a protracted nausea by other means has already been recommended. The exercise of sailing is useful on another and a very different account. All motion without exertion, or with no more exertion than gives a pleasurable feeling to the system, which the Greeks expressed by the term æora, instead of exhausting, tranquillizes and proves sedative. It retards the pulse, calms the irregularities of the heart, produces sleep, and even costiveness. Hence sailing on the Tiber was a common prescription among the Roman physicians; and many consumptive patients have found great benefit from long voyages, in which they have suffered no sea-sickness, and have been exposed to many varieties of atmospherical temperature. Hence too, the well known advantage of exercise in a swing, or in a carriage, on horseback, or even on foot, as soon as these can be engaged in with comfort: the organs of respiration, like those of every other kind, deriving strength, instead of weakness, from a temperate use of them.

Advantages of sailing or other kinds of motion without exertion: forming the æora of the Greeks.

Swinging; carriage exercise; horse-riding. Gymnastic medicine often carried to an extreme. As by Sydenham: Hoffman: Baglivi.

Gymnastic medicine, however, seems by many pathologists to have been carried to an extreme; and especially by Sydenham, who employed horse-exercise in all stages of the disease, and roundly affirms that neither mercury in syphilis, nor bark in intermittents, is more effectual than riding in consumptions.* Nor is carriage-exercise, says he, by any means to be despised though not equal to that of the saddle. Hoffman and Baglivi adopted the

* Opp. p. 629.

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same opinion, and laid it down in terms nearly as unqualified. Where phthisis is a secondary disease, and dependent upon some obstruction of the digestive viscera, exercise of this kind may, in many instances, be employed as an important co-operation with other means even from the beginning; and to such cases of consumption Desault judiciously limits it. In the present day it has been revived by Dr. Stewart under a variety of ingenious modifications, and appears in many cases to have afforded relief: but the constitutions of mankind must strangely have altered since the days of Sydenham, if the severity of horse-exercise could at that period have been employed as a specific remedy in consumptions of every kind. Stoll did not find it so in the middle of the last century; for he tells us that if a consumptive patient mount his horse he will ride to the banks of the Styx as surely as if he were in a pleurisy.* And Stoerck died consumptive though in the habit of riding, killed by an hæmoptysis apparently produced by this exercise.†

Treatment
Third intention.
How limited by Desault.

Fourth curative intention.
To improve the secretion from the lungs.

IV. Another part of the curative process in the disease before us, has consisted in endeavouring to subdue the local irritation, and improve the secretion from the lungs. This has been chiefly attempted by fumigations, medicated airs, expectorants, and sedatives.

Fumigations of aromatic herbs.

Bennet was strongly attached to the first of these, and thought they proved peculiarly detergent, and enabled the patient to throw up a more laudable discharge with increased facility. He sometimes employed aromatic herbs which were immersed in hot water, over which the patient held his head surrounded with clothes to confine the vapour, which was thus inhaled with every inspiration.

Of terebinthinate resins,

But he seems to have placed more dependance on an inhalation of the fumes of various terebinthinate resins, as frankincense, styrax, and turpentine itself, mixed into a powder or troche with a few other ingredients, and burnt

* Rat. Med. I.

† Quarin, pp. 162, 103.

on coals: to which he sometimes added a considerable proportion of orpiment. And such was the success ascribed to this practice, that Willis, not many years after, resolved the greater exemption of certain parts of England and Holland from coughs and consumptions, to the turf and peat fires which the inhabitants were in the habit of using, and the arsenical principle which was intermixed with the material. In our own day terebinthinate fumigations have been very extensively tried in consequence of the warm recommendation of Sir Alexander Crichton, who thought he had perceived great and decisive advantage from the aroma of pitch and tar diffused through rope manufactories, ships, and other places where these articles are in perpetual use.* I have tried this repeatedly by heating a tin vessel of tar over an oil or spirit-lamp, and thus impregnating the atmosphere of the chamber with the powerful vapour that arises. In doing this, however, we must be careful not to burn the tar; for in such case the room will be filled with an empyreumatic smoke that will greatly augment the patient's cough instead of diminishing it: and it will be also advisable, as recommended by Dr. Paris,† to add about half an ounce of subcarbonate of potash to every pound of tar, for the purpose of neutralizing its pyroligneous acid, the fume of which will otherwise ascend and prove irritating.

GEN. III. SPEC. V. Marasmus Phthisis. Consumption. Treatment. Fourth intention. and mineral exhalations. Fumigation from tar.

In those states of the disease in which terebinthinates, as myrrh, benzoin, or copaiba, may be taken internally with a prospect of success, this kind of fumigation will sometimes prove useful also: and it is hence far better adapted to the tubercular and catarrhal than to the apostematous variety. In a chronic state of the first two, I have sometimes thought it serviceable; but I have more frequently used it without any avail. The experience of Dr. Forbes, physician to the General Military Hospital,

Internal use of myrrh: benzoin and copaiba.

Hospital experiments of Forbes.

* Practical Observations on the Treatment and Cure of several varieties of Pulmonary Consumption; and on the Effects of the Vapour of Boiling Tar in that Disease. Lond. 8vo. 1823.

† Pharmacologia, Vol. II. p. 339. edit. 1822.

GEN. III. SPEC. V. Marasmus Phthisis. Consumption. Treatment. Fourth intention.

who has tried this remedy in a particular ward of this establishment, upon an extensive scale, very closely coincides with these remarks. Of nineteen cases of phthisis, of which he has given us an account, it neither cured nor improved any; on eight it had no effect; and mischievously suppressed the secretion, injured the breathing, and increased the disease in eleven. In cases of chronic catarrh, where the secretion constitutes the disease, and tonics and astringents are useful, it often succeeded. Of thirty-two cases narrated, it had no mischievous effect on any; no effect whatever on eighteen; improved six; and cured eight.*

Pneumatic medicine. Oxygene gass.

Pneumatic medicine, which, about thirty years ago, was in the highest popularity, does not appear, when candidly examined, to have been more successful. Oxygene gass has, in almost every instance, proved so stimulant, and so much increased the signs of inflammatory action, that though it has seemed occasionally to afford a momentary relief in a few cases, it has rarely been persevered in more than a fortnight, by which time it has often suppressed the usual expectoration, and produced an hæmoptysis.†

Hydrogene gass.

There was much more reason and ingenuity in recommending an inhalation of hydrogene intermixed with common air than of oxygene: since the effect of this gass in destroying the irritability of the living fibre is known to every one; and it was hence a plausible conjecture that by being applied immediately to the seat of the disease it might sufficiently subdue the inflammatory impetus, change the action of the ulcerated surface, improve the secretion, and annihilate the hectic. The experiment has been tried at home and abroad upon a pretty extensive scale, by employing different proportions of hydrogene, so that the patient has twice a-day breathed from a pint to a quart of gass at a time, diluted with from

* Remarks on Tar-Vapour as a Remedy in Diseases of the Lungs. Illustrated with Cases by James Forbes, M.D., 8vo. 1822.

† Fourcroy, Annales Chirur. IV. p. 88. 1790

twelve to six times its measure of common air; and making every allowance for an exaggeration of statement in those who have most warmly engaged in the practice, it seems difficult not to concede that it has proved serviceable in various cases.

GEN. III. SPEC. V. Marasmus Phthisis. Consumption. Treatment. Fourth intention.

A combination of hydrogene with common air seems, indeed, to be beneficial in various other modes of application; but whether by lowering the ordinary stimulus of common air or by directly decomposing and exhausting the nervous fluid communicated to the lungs, it is not easy to determine. In either way, however, it has an equal tendency to indispose them to inflammatory action. Thus Clapier, in the Journal de Medicine, relates a case of confirmed consumption cured by an habitual residence in a coal-mine;* and expressly states that the matter expectorated soon began to assume a more healthy appearance, and was excreted more freely. It is, in like manner, a common remark that the miners of Cornwall are more generally exempt from phthisis than most other persons:† and that butchers, who are perpetually engaged in slaughter-houses, and surrounded by a vapour impregnated with hydrogene, possess an equal emancipation. It is probably to this cause, if to any, we are to ascribe the benefit which Bergius found consumptive patients derive from a residence in cow-houses,‡ and which was not long since a fashionable mode of practice in our own country.

On what principle useful.

Gass of coal-mines.

Exhalation of slaughter-houses:

of cow-houses.

Expectorants and demulcents have, also, very generally been employed for the same purpose; that of subduing the disease by exciting a healing action in the tubercles or ulcerations, indicated by improvement in the expuition.

Of the general nature and mode of action of these classes of medicines, we have already spoken at large in discussing the treatment of cough and asthma;§ and our

Expectorants and demulcents.

* Journ. Med. XVIII. 59.

† Southey, Observations on Pulmonary Consumption, 8vo. 1814.

‡ Neue Schwed. Abhandl. 1782. P. III. p. 298.

§ Vol. I. p. 541, 549.

GEN. III. SPEC. V. Marasmus Phthisis. Consumption.

remarks, therefore, upon the present occasion will be but few.

Treatment. Fourth intention.

Where the irritation is considerable, and accompanied with much increase of vascular action, as in the commencement of the apostematous and catarrhal varieties, the best demulcents, and, indeed, the only medicines of this kind we can employ as palliatives, are the vegetable mucilages, as of tragacanth, quince seeds or gum Arabic. Where it is necessary to diminish the general action, these may be united with small doses of ipecacuan, or of squills; which have the double power of exciting nausea, and unloading the mucous follicles of the bronchiæ as expectorants. And, where the cough is very troublesome, and the pain acute, they should be united with narcotics, as opium or hyoscyamus.

The best demulcents vegetable mucilages:

sometimes with the nauseating expectorants.

In a more advanced stage of the disease, and through the entire course of the tubercular variety, except where hæmoptysis is present, the expectorants, more properly so called, have often been employed with advantage. One of the oldest of these is sulphur, and perhaps one of the best; from its not readily dissolving in the first passages, it is carried to the rectum, and skin sometimes, with little alteration; and hence gently stimulates both extremities, loosens the bowels, and excites a pleasing diapnoe on the surface. It is in this way it appears to be serviceable in an inflammatory or tubercular state of the lungs. It was in high repute among the Greek and Roman physicians, who, when employing it as an expectorant, usually combined it with yolk of egg; and it has maintained its character to the present day. In the tubercular, or scrophulous variety, as it is often called, it has frequently been united with some other preparation, as diaphoretic antimony, with which it was joined by Hoffman, dulcamara by Videt,* and cinchona by Dr. Trotter.†

Sulphur.

Balsams and resins.

The vulnerary balsams and resins, however, have been

* Medicine Expectante, Tom. III. p. 237. 8vo. Lyons, 1803.

† Medicina Nautica, Vol. III. p. 325. 8vo. Lond. 1814.

more generally had recourse to; but ought rarely, perhaps never, to be employed in an early stage of the disease. Their action is common, and depends upon their possession of a terebinthinate principle; and hence they might be used indiscriminately, but that some of them are less stimulant and heating than the rest. Myrrh and camphor are among the least irritant, and may often be employed when we dare not trust to any other. Copabia, though of somewhat greater balsamic pungency, has often been found essentially useful. Marryatt was peculiarly attached to it: he gave twenty drops of it night and morning upon sugar; and asserts that, when an ulcer has been formed, it ought never to be omitted;* and Dr. Simmonds appears to hold it in nearly as high an estimation.†

Gen. III. Spec. V. Marasmus Phthisis. Consumption. Treatment. Fourth intention. Myrrh: Camphor: Copabia.

Many of the remedies already enumerated under the present head act with a sedative influence, and of opium we have already spoken. But there is a medicine which immediately belongs to the present place not yet noticed that has of late years been strongly urged upon the public in the warmest terms of panegyric, and by many celebrated writers been regarded as a specific in consumption, and that is the prussic or hydrocyanic acid, or cherry-laurel water, which makes a close approach to it. M. Magendie has been highly sanguine concerning it in France,‡ MM. Brera, Manzoni and Borda§ in Italy, and Dr. Granville in our own country.‖ Yet not a single case of actual cure in confirmed phthisis has hitherto been advanced by any of them. We have already noticed this powerful medicine as a most valuable subduer of nervous

Hydrocyanic acid. Cherry-laurel-water.

* Therapeutica. Lond. 1758.

† Practical Observations on the Treatment of Consumption. Lond. 1780.

‡ Recherches Physiologiques et Cliniques sur l'Emploi de l'Acide Prussique ou Hydrocyanique dans le Traitement des Maladies de Poitrine, &c. Par F. Magendie, D.M. &c. 8vo. Paris. 1819.

§ Storia della Febre Petecchiale di Ginova, &c.

‖ Observations on the Internal use of the Hydrocyanic Acid in Pulmonary Complaints, &c.

GEN. III. SPEC. V. Marasmus Phthisis. Consumption. Treatment. Fourth intention.

irritation in periodic nervous cough, and hooping cough; and there can be no question that it will often be found capable of acting in the same manner in phthisis. But from the greater degree of debility and relaxation in this last than in the preceding diseases we have more to fear from the mischievous effects of the prussic acid, which cannot always be guarded against and which M. Magendie admits to have taken place occasionally with very fearful apprehensions; such as vomiting, diarrhœa, great depression of spirits, prostration of strength, and even syncope. And hence, if it be employed as a palliative at all, it should be in the earlier stages of the disease; for in the later, where it is most wanted, it is altogether unsafe, and must yield to most of the forms of opium. And the same remark may be made concerning aconite, another of the famous counter-stimulants of the present Italian school of medicine, and with which M. Borda tells us he has sometimes snatched the patient from the jaws of death.

Aconite.

Fifth curative intention. To excite a change of action.

V. The last part of the general therapeutic process which has been attempted in most ages, has consisted in endeavouring to diminish or carry off the local affection by a transfer of action.

Blisters.

Blisters have very generally been applied for this purpose to the back or the chest. Their service is temporary, but often very efficacious, and they ought never to be neglected. It was formerly the custom to render them perpetual by the use of savine ointment, or some other escharotic. But it is equally less painful and more beneficial to let the skin heal, and renew them after short intervals.

Setons, issues, and caustics.

Setons, issues, and caustics, however, where the constitution is not very delicate, nor the habit very irritable, have proved far more powerful revellents, on account of their more violent stimulus and greater permanency of action.

Actual cautery: employed severely by the ancients.

The actual cautery, though much abstained from in modern practice from its apparent, rather than real severity, was in almost universal use in ancient times; and, in the mode described by Celsus, was undoubtedly

a very formidable operation. When the disease, says he, has taken a deep root, the cautery must be applied under the chin, in the throat, twice on each breast, and under the shoulder-blades; and the ulcers must not be healed as long as the cough continues. Dr. Mudge pursued this plan to a very considerable extent on his own person, and ascribes his cure to the use of it. He applied a large caustic between the shoulders, which produced an eschar of nearly three inches in diameter, and held fifty peas: but he confined himself at the same time to milk and a vegetable diet.* Bennet exchanged the caustic for issues, which he placed in the groins and hams, under the arms, and between the shoulders, and kept sweet by peas of orris root; and asserts that he found the use of these highly beneficial. Yet setons are said by those who have employed them to be still more serviceable than issues.

Gen. III. Spec. V. Marasmus Phthisis. Consumption. Treatment. Fifth intention.

Severe caustic applied by Mudge to his own person.

Severe use of issues.

The obvious intention is to produce a revulsion; and hence by transferring the morbid action to a part of less importance, to allow the lungs to return to a healthy condition.

Such transfer may, by these means, in some cases, be rendered total, though, in general, the morbid irritation is only partially, instead of entirely, carried off. There are other means, however, by which it seems to be removed altogether, although they are means that are seldom put into our hands.

Sometimes the morbid irritation has hereby been entirely carried off.

Thus M. Bayle's fifty-third case is that of a medical man who was fully prepared to meet his fate, and resolved to take no medicine whatever. At this time a severe rigor from an unknown cause attacked him, succeeded by a sweating-fit so profuse that his linen was changed two-and-twenty times in a night, and even this was not sufficient. The paroxysm proved critical; and the disease was thus carried off by an ephemera.†

Carried off by a paroxysm of ephemera.

Sir Gilbert Blane gives an account of a like singular

By a hurricane.

* Radical Cure for a recent Catarrhous Cough, p. 78. 8vo. Lond. 1779.

† Recherches sur la Phthisie, &c. ut suprà.

GEN. III. SPEC. V. Marasmus Phthisis. Consumption. Treatment. Fifth intention.

and salutary change excited by a hurricane at Barbadoes, in 1780; which produced such an effect on the air, or on the nerves of the sick, that some who were labouring under incipient consumption were cured by it; while others, who had reached a more advanced stage, were decidedly relieved, and freed for a time from many of their symptoms.*

Suspended by a tooth-ache.

Bennet relates a case of consumption which was suspended for two days in all its symptoms, except the emaciation, by a severe tooth-ache.† In Hautesierck's collection, we have an account of a recovery from a purulent expectoration, by the formation of a fistulous abscess in another part of the body, which was itself cured by an operation.‡ And we have numerous instances of consumption produced by a sudden cure of some chronic cutaneous eruption, and especially itch; and of its ceasing upon a restoration of the primary complaint. There is, however, no affection that seems to keep a consumptive diathesis in so complete a state of subjugation as that of pregnancy. Most practitioners have seen cases in which a female has dropped all the symptoms of phthisis upon conception, and has continued free from the disease till her delivery. Suckling does not seem to continue the truce; but if she conceive again shortly afterwards, she renews it: and there have been instances, in which from a rapid succession of pregnancies, the suspension has been so long protracted that the morbid diathesis has run through its course, and entirely subsided, leaving the patient in possession of firm and established health.

Produced by a sudden cure of some cutaneous eruption, and removed by its restoration.

Suspended by pregnancy:

and sometimes radically cured by it.

How far any other disease may be employed as a preventive.

As one disease, therefore, or state of body, is well known to have a frequent influence upon another, and consumption is found to be thus influenced by various affections, it is a question well worth inquiring into whether there be any malady of less importance, which,

* Observations on the Diseases of Seamen, 8vo. Lond. 1785.

† Vestibul. Tabid. ut suprà.

‡ Recueil d'Observations de Medicine, &c. Part II. p. 286. Paris 1772.

like cow-pox over small-pox, by forestalling an influence on the constitution, may render it insusceptible of an attack of phthisis? Dr. Wells not many years ago, very ingeniously engaged in an inquiry of this kind; and finding that it was common for the consumptive in Flanders to remove to the marshy parts of the country where agues were frequent, began to think, not indeed that agues might give an exemption from consumptions, but that the situation which produced the former might prove a guard against the latter. And so far as his topographical investigations have been carried, and they have extended over some part or other of all the quarters of the globe, this opinion has been countenanced: for he has discovered that wherever intermittents are endemic, consumption is rarely to be met with; while the latter has become frequent in proportion as draining has been introduced.* The later inquiries of Dr. Southey do not support this hypothesis; but the question is yet unsettled, and well worth pursuing; and Mr. Mansford who practises in the interior of Somersetshire, has still more lately published a work which, though not written as a defence of Dr. Wells's opinion, indirectly confirms it, by endeavouring to prove that a low, inland situation, like the vales of his own country, is far better calculated as a residence for consumptive patients than the air of mountains or of the sea-coast.†

Inquiry of Wells upon this subject.

Whether an atmosphere productive of agues does not indispose to consumption.

His investigations support this idea.

Those of Southey are not favourable to it.

* Trans. Medico-Chir. Soc. Vol. III. p. 471.

† Inquiry into the Influence of Situation on Pulmonary Consumption. By J. G. Mansford, &c. 8vo. 1813.

GENUS IV.

MELANOSIS.

Melanose.

SECRETION OF A BLACK MATERIAL, MORE OR LESS INSPISSATED; STAINING OR STUDDING THE VISCERAL AND OTHER ORGANS.

GEN. IV. Compared with other tubercular diseases:

THE tubercles and tubers of struma chiefly originate in the texture of the glands, especially the lymphatic, and are often confined to them. There are other tubercles, as those of mesenteric tubes, that spread rapidly into different textures, and sometimes originate in them. But there are none that seem to commence or extend over so large a field as those we are now about to describe, or so seriously to affect the constitution. There is not indeed a single organ of the simplest or most complicated kind, from the cellular texture to the unravelled elaboration of the brain, which is not occasionally loaded with them; while in various parts the black pigment which gives them their hue, is found diffused in extensive sheets, without tubercles, or the pulpy matter that fills their cysts; transforming the natural colour of the organs to which it is conveyed into its own morbid jet.

and more extensive than any of them:

sometimes diffused:

and may perhaps be found generally diffused:

The last change has hitherto been found chiefly in the bones, but sometimes also in the membranes, and even the parenchyma of organs, constituting, in the language of M. Breschet, false membrane or membranous expansions on the surface of the mucous and other textures; and it is hence possible that examples may hereafter be met with of a generally DIFFUSED as well as a generally TUBERCULAR form of the disease. But as the second, with a

but the tubercular the only known species

few local exceptions, is the only mode under which it has hitherto appeared, we have at present but one species of the genus, which we shall proceed to describe under the name of

GEN. IV. Melanosis. Melanose.

MELANOSIS TUBERCULARIS. TUBERCULAR MELANOSE.

SPECIES I.

MELANOSIS TUBERCULARIS.

Tubercular Melanose.

THE BLACK SECRETION PULTACEOUS, IN ENCYSTED TUBERCLES, PEA-SIZED OR WALNUT-SIZED; SCATTERED IN GROUPS OVER MOST OF THE ORGANS; CHIEFLY BELOW THE SURFACE, SOMETIMES UPON IT: FEVER MOSTLY A HECTIC: GREAT DEBILITY.

GEN. IV. SPEC. I. Only lately noticed: except amongst animals.

It is singular that this very striking disease should not have been traced, or rather perhaps not have attracted the attention of pathologists till a few years back; at least in the nosology of man. For it has been long observed in many kinds of quadrupeds, as the dog, cat, hare, but especially the horse; and among the veterinary surgeons of France has obtained the name of charbon, or maladie charbonneuse. It is, however, to the ingenious anatomical researches of MM. Breschet* and Laennec that we are indebted for our first knowledge of the disease as it exists in man, and for the very appropriate generic name of MELANOSIS, or MORBID DENIGRATION, by which it is now generally distinguished; though it is necessary to observe that M. Bayle has employed this term, in a some-

Charbon, what.

Morbid denigration.

* Considerations sur une Alteration Organique, &c. in Magendie's Journal de Physiologie.

GEN. IV. SPEC. I. Melanosis Tubercularis. Tubercular Melanose.

what different sense, and appropriated it to those dark-coloured or hepatised indurations which are occasionally found in the lungs of consumptive patients, affected with the catarrhal or ulcerative modification, as distinguished from the white tubercles with which they are studded in the tubercular variety. It is to the labours indeed of MM. Breschet and Laennec, and to a valuable but unfinished tract on the subject by Messrs. Cullen and Carswell, of Edinburgh,* that the author will chiefly have recourse in furnishing his account of this malady; concluding with such remarks of his own, in respect to the general nature and physiology of the disease, as may seem to be called for.

Cause, progress, and treatment obscure.

The cause, progress, diagnosis, and mode of treatment of tubercular melanosis are at present obscure and unsatisfactory. From the few cases before us, the individual labouring under it exhibits, when he first applies for help, a considerable degree of febrile excitement, debility, and oppression in the thorax or abdomen; most commonly about the pleura or in the loins: as though the flow of the blood were impeded in its orbit, and the sensorial energy were exhausted by some preternatural and morbid action. These, however, are not the introductory symptoms: for the disease usually commences with catarrhal or rheumatic affections after exposure to cold, succeeded by shivering fits. The patient seems generally unwell for the first five or six weeks after this attack; but when it has once firmly established itself, and evinced the thoracic or abdominal signs just adverted to, it proceeds with a rapid and fatal step, and in about a fortnight he falls a victim to the hectic fever, for it is usually of this type, perspiration, emaciation, and debility by which he is jointly assaulted: the prodromi or incursive symptoms, whether affecting the loins or chest, usually giving way before the closing scene arrives, and deceiving the suf-

Most striking symptoms.

Incursion.

Progress.

Fatal Issue.

* On Melanosis, Transactions of the Medico-Chirurg. Soc. of Edinb. Vol. I. 8vo. 1824.

ferer, and sometimes even his medical attendant, into a belief that he is improving; when he suddenly sinks from debility alone.

GEN. IV. SPEC. I. Melanosis tubercularis.

If the patient be examined accurately at this time a few tubercles or clusters of tubercles may occasionally be felt under the skin, especially that of the abdomen or of the breasts. And sometimes also a cyst much larger than the rest may be found projecting, and even forcing its way externally through the integuments. In a few instances this larger cyst ulcerates, of which a striking example occurred to M. Breschet in 1821, and is particularly noticed by Mr. Cullen. In the right groin of the patient, who was a female, an ulcerative surface was perceived about as large as a crown-piece, the bottom of which consisted of the ordinary black material of the disease before us, jetty as China-ink, of the consistence of cream above, but much more inspissated below, where it was in contact with the cellular texture. There were sufficient proofs that it was not a mere sloughing sore; among which it may be observed that it was destitute of fetor, and that in its immediate vicinity, as well as in other parts of the body, as was afterwards ascertained by opening into them, there was a crop of defined melanotic tubers of different forms and diameters.

Tubercular Melanose.

Tubercles may often be traced externally.

Sometimes altered when large.

Exemplified.

One of the best marked instances upon record is the following, which occurred to Professor Alison in the Royal Infirmary, Edinburgh. The patient's name was Rachael Bruce, and she was admitted on the third of June.* She complained of severe pains shooting down from the loins to the inferior extremities, and to the abdomen. She had similar pains in the right shoulder and arm, increased in the night-time, or by motion. She had become weak and emaciated since her complaints began, and was liable to shivering, followed by flushing and profuse perspiration, which increased her debility without relieving her pains. The abdomen was

History drawn from the life: a case of Alison's.

Complaints on application.

* Trans. of the Medico-Chir. Soc. of Edinb. ut suprà. p. 275

GEN. IV. SPEC. I. Melanosis tubercularis. Tubercular Melanose.

swelled, but did not fluctuate on percussion, and the distention varied in degree at different hours of the day. She had thirst with scanty, high-coloured urine, not coagulating by heat. The integuments of the abdomen were flaccid; and a hard, moveable tumour could be felt in the ileac and hypogastric regions. She was also liable to paroxysms of dyspnœa during the night. Her appetite was impaired. She had a bad taste in the mouth, with white and dry tongue. Her bowels were reported to be regular; but she had occasional nausea.

Whence originated.

She stated her complaints, which were of five or six weeks standing, to have commenced, after exposure to cold, with shivering and pain, and stiffness of the loins, and of the hip and knee-joints of the left side. The enlargement and induration of the abdomen had been remarked during the last fortnight only.

Progress.

Up to June the twentieth, being seventeen days from the time of admission, the symptoms continued with little variation. On the twenty-first were perceived several small painful tumours on the integuments of the abdomen, which she declared to have existed from the commencement of her illness. She was on this day examined by a skilful accoucheur who reported the tumour felt in the hypogastric region to be unconnected with the uterus. On the twenty-fourth a copious sweating, with involuntary discharge of urine, was added to the other symptoms. From this moment there was great debility with decided hectic fever; and a tendency to sloughing of the sacrum. On the evening of the seventh she had vomiting of a dark coloured matter, and died soon after.

Fatal termination.

Sometimes more rapid.

Exemplified from Home.

The course is usually more rapid: and in the case of John Houston, a shoemaker, admitted into the same Infirmary under the care of Dr. Home, extended only to thirteen days. His chief symptoms at the time of admission were those of pleurisy, with a severe cough and difficult expectoration. The bladder was also affected; and on the eighth day, he was troubled with painful hemorrhoidal tumours, probably produced by the action

of repeated purgatives with which his bowels had been treated. The other symptoms gradually diminished, but the debility increased considerably. On the twelfth day, as we learn from a diary of the symptoms and treatment, furnished us by Sir Andrew Halliday, his pulse was a hundred and twelve; heat 98¾ Fahrenheit; was allowed a beef-steak, and a quarter of a pint of sherry. On the ensuing night he made complaint of great weakness; his pulse quickened to a hundred and forty, and he died at four in the morning.*

Usual treatment.

The treatment is yet to be learnt; and the cases before us afford little instruction upon the subject. The first was contested by little more than palliatives, as leeches, laxatives, anodynes, and Dover's powder. The second unfolds a bolder plan, though the patient still sooner reached his end. It consisted in venesection to sixteen ounces, two days in succession, and powerful purgatives, at first often repeated, of calomel, jalap, and sulphate of magnesia, &c. But this was not long continued, no benefit appearing to issue from it; and it yielded to sedative mucilages and a tonic diet.†

Suggestions upon treatment.

In reasoning speculatively, we should speak with great modesty. But admitting the material which forms the tubercles to be a peculiar secretion, and that the constitutional excitement consists mainly in this new and stimulant action, perhaps it may, in future cases, be found useful to combine the two intentions of allaying the peculiar irritation, and, at the same time, urging the secernents to a renewal of their proper action; or, in other words, to employ the conjoint force of sedatives and counter-irritants; which may be effected by an union of opium, or Dover's powder, with the tincture of iodine. The great and beneficial influence which the latter is well known to exercise in many cases over strumous tubercles, should indicate its use on the present occasion. And it is also not

Dover's powder with iodine.

* Lond. Med. Repos. Vol. XIX. p. 442.

† Sir Andrew Halliday, ut suprà.

GEN. IV. SPEC. I. Melanosis tubercularis. Tubercular Melanose.

improbable, from the approach which the disease seems occasionally to make to the more irritant cases of phthisis, in its excitement of the chest, and its hectic fever, that the hydrocyanic acid might, at times, with great advantage, take the place of all other sedatives. Such coincidences of symptoms, moreover, show us clearly the place which melanosis should occupy in a digested nosological arrangement.

Hydrocyanic acid.

Post-obit appearances.

Before hazarding a syllable upon the physiology of this very extraordinary disease, it is requisite to put the reader into possession of the general appearances afforded by post-obit examinations; and the case already alluded to, as under Professor Alison's care, is admirably adapted to this purpose, if put into an abridged form.

The body evinced great and general emaciation, and various small dark-coloured tumours, perceptible during life, were still distributed over it. In the mammæ these were largest and most numerous: they were traced in cysts, and embedded in the cellular substance; and when cut into were found to contain a deep black coloured matter, of a soft and pulpy consistence. Within the abdomen, most of the cellular and adipose textures had disappeared. The peritonæum lining the parietes was of a blackish colour, and the black matter was irregularly deposited in striæ, and spots upon the inner side of the membrane, which had lost much of its natural transparency. The omentum presented a similar appearance, and several globular shining tumours of a black colour were appended to it, which, when cut into, poured out a similarly coloured fluid. Spots and tubercles of a like kind were traced in the serous or outer membrane of the intestines and between the folds of the mesentery. The ovaria were several times as large as their natural size, seated in front of the uterus, and occupying the lateral ileac regions. Their external surface had a dark, shining, lobulated appearance, with numerous ramifications of vessels upon the peritonæal covering; beneath which, black matter was irregularly deposited in spots, giving a

mottled appearance to the whole. When cut into their substance was uniformly black. The cellular texture still retained its consistence, and vessels containing red coagulated blood could be traced through it. Several distinct cysts or cavities were found in their substance, which poured out a black liquid when opened. The kidneys, liver, spleen, and the mucous or interior membrane of the stomach and intestines were all free from black matter, although it was deposited in the cellular tissue connected with these organs. On removing the breast-bone and skull-cap it was observed that the whole texture of the sternum, the anterior portion of the ribs, and a great part of the parietal and occipital bones, were black, more brittle, and of softer consistence than natural, but without enlargement or ulceration. The periosteum was nearly natural, but the whole inner table of the skull, when removed from the dura mater, was of a darker hue than natural, and, in some places, where the black matter was deposited in irregular patches of the bone, there were corresponding stains on the surface of the dura mater. The substance of the brain was healthy, but a few black striæ were discernible in the membranes, and the tunics of several of the vessels. A large quantity of serum was effused under the arachnoid membrane and in the ventricles. Within the thorax the costal pleura and surface of the lungs were studded with black tubercles like those of the integuments, while some of them were larger. The substance of the lungs was dark, and some minute tubercles were embedded in it, and like spots were noticed beneath the pericardial coverings of the heart, which contained some coagulated blood in its cavities, and was softer than usual.

It should further be observed, that in a few places in the present subject, but more generally in others, the black material varied materially from its ordinary degree of consistence, and, instead of being pulpy or nearly solid, was a fluent liquid; and that several of the tubercles were filled with a white, and brain-like substance, while those that surrounded them were of a deep jet.

GEN. IV. SPEC. I. Melanosis tubercularis. Tubercular Melanose.

Early physiological opinions respecting the nature of the disease; found to be erroneous.

The first opinion formed respecting the nature of these enlargements by MM. Breschet and Laennec, was that the dark material was congested blood that had escaped from the capillary vessels into the cellular substance by a rupture of their coats, or by anastomosis from relaxation. But this conjecture was soon found untenable, as it was sufficiently ascertained that the material is a distinct secretion, and is now supposed to be a secretion sui generis. Nor is another opinion of M. Laennec's much more tenable which advances that the black material evinces different stages of elaboration: that when first thrown forth it is pultaceous or nearly solid, and in a state of crudity, but that it gradually matures, and advances to a state of ramollissement or fluidity. For it is well observed by Mr. Cullen that were this true, we should expect to find the largest cysts or reservoirs in the highest state of liquifaction, and the smallest in the highest state of solidity, the contrary of which is usually the course pursued.

Whether the matter evince different stages of elaboration. This also incorrect.

Distinguished from cancer and fungus hæmatodes

It is also justly remarked by the same able writer, that the characters of tubercular melanosis completely distinguish it from cancer and fungus hæmatodes; since it is well known to exist without local pain, and to propagate itself by cysts, and boundary lines, while both the others are accompanied with severe lancinating pains, and burst through every bond and extend their ravages in every direction.

Points not yet touched upon. Unity of increased action through the whole of the secernent system, and its origin in a single organ. First sufficiently clear.

The points which have not hitherto been touched upon, and which seem chiefly to call for our attention, are the singular unity of action which seems to exist throughout the whole extent of the secernent system, in the production of the black material, during its state of morbid excitement: and the apparent issue of this action, and consequently of the black material hereby produced from a single source or organ. The first is too obvious, from the history already given, to need any additional remark: and, unless I much mistake, subsequent examples will prove that the second has as firm a foundation. Let the reader

Proofs of the second.

look back at Professor Alison's case, and pause over the state of the ovaria, as they appeared on dissection, and he will have little doubt, I think, that the disease commenced in this quarter, and hence radiated over almost every other organ. In the case that occurred to M. Breschet in the School of Medicine at Paris, there seems as little doubt that it commenced in the right groin: and in that which fell under the care of Dr. Home, in the right eye. Such was the morbid condition of this organ that in the spring of 1822 the patient was compelled to have the ball extirpated, which, on examination was, even at that time, found to have its vitreous humour completely occupied by a black-looking, fibrous mass that pushed the chorid coat and retina into the posterior chamber: and which no doubt constituted the whole disease, as these displaced tunics had undergone no sort of alteration, while the sclerotica was every where entire. The cornea, indeed, had sloughed, but evidently from the general distention of the globe alone. There was also a considerable mass of black matter lodged posteriorly to the globe, and deep in the orbit, apparently in the fat and cellular texture surrounding the optic nerve.

GEN. IV. SPEC. I. Melanosis tubercularis. Tubercular Melanose. From Alison's case. From Breschet's case From Home's case. This case more fully examined.

Such was the state of the globe when, more than a twelvemonth before any symptoms of melanosis were complained of, it was found expedient to extirpate it, from what hereby appears to have been an occult and local existence of this very disease, seemingly confined to the organ of the eye alone, and, hence, originating there.

It appeared, also, from an examination of the same orbit after the death of the patient, that such was the tenacity of the malady that even the extirpation of the globe did not eradicate it. For the writers tell us, and the remark is well worthy of attention, that, "when we examined the orbit after death, we observed that the disease had been reproduced in its old situation, and at the expense of the cellular tissue; for the muscles and nerves, so far as we could trace them, had undergone no alteration."*

* Cullen and Carswell, ut suprà, p. 274.

GEN. IV. SPEC. I. Melanosis tubercularis. Tubercular Melanose.

General conclusions as to the commencement and course of the disease.

We have reason to conclude, then, that the disease before us is at first local; or commences in a particular organ; and that, from the general sympathy of the secernent system with the part where it first appears, it ramifies in every direction, over the most solid and compact, as well as over the most loose, and yielding textures; accumulating and forming reservoirs where there are cells or other hollows for its reception, and spreading as a jet dye or sheath on the surface, or through the parenchyma, where these are not.

Inquiry concerning the nature of the black dye.

Allied to the black pigment of the choroid:

and still more to that of the rete mucosum supplying black hair;

but most of all to the black rete mucosum of negro-tribes.

But what is the nature of this black die or pigment, and by what means is it produced? Much more attention to the subject is necessary before any satisfactory reply can be given to this question. The material to which it seems most nearly to make an approach in temperate climates is the black pigment of the choroid membrane, and perhaps that which is supplied from the rete mucosum as a colouring matter for black hair. Both these are evidently the production of the secernent system. They are indeed small in quantity; but if we turn our eyes to the intertropical climates, we shall find the same or a like jet pigment thrown forth over the entire surface, and continued by a permanent supply, as the tide antecedently furnished is carried of. And if we attend to the curious economy which takes place in this subject respecting the children of negroes, we shall also find this material produced in very large abundance in a very short time: for the infants of negroes, as we shall have occasion to observe more at large when treating of EPICHROSIS or MACULAR-SKIN,* are nearly fair when first born, and only become coloured with the black effusion a few weeks afterwards; which at first gives little more than a tawney hue, but gradually advances to a jet.

Rapidity with which this is secreted in infants.

Both also secreted in a more fluid and a more concrete state.

We shall also have occasion to notice in the same place, that this black die, like the pigment in melanosis, is on some occasions secreted in the form of a finer and more

* Vol. v. Cl. VI. Ord. III. Gen. X. Spec. II. VI. and comp. with the introductory note to Gen. IX. Trichosis.

fluent liquid, and, in others, in a more inspissated state, and united with a coarser material, constituting the rete mucosum of Malpighi; who, moreover, gave it the name of rete from a belief that he was able to trace in it something of a fibrous structure; an idea that has not been realized by Cruickshank or any later anatomist. And it is not a little singular that, as in melanosis we sometimes meet with a few patches or tubercles of the preternatural secretion destitute of its colouring dye, and presenting a variegated appearance of black and white mosaic, so in the distribution of the natural pigment of the negro over the surface, we sometimes meet with the same casual obstruction to the flow of the black dye, producing that marbled skin which gives the individuals the name of pye-balled negroes.

GEN. IV. SPEC. I. Melanosis tubercularis. Tubercular Melanose. Both evincing interruptions or patches of white.

Melanosis, then, seems to consist in a profuse and general secretion of a kind of rete mucosum, with the black pigment that is usually united with it in intertropical countries, transferred from the exterior to the interior of the body; and deposited, like fat, or the water of dropsy, chiefly in the cellular texture: issuing, as already observed, from a radical point; and, from the great excitement hereby given to the secernent system generally, producing fever, emaciation, and other disturbances of the constitution, as in other excitements of the same system from acute anasarca or ascites. But what are the circumstances, or the peculiar state of habit that predisposes to a profusion of this rather than of any other secretion, we know no more than we do in the general and profuse secretions we often meet with of calcareous earth, saccharine urine, or even of fat.

General conclusion.

The chemical analysis of MM. Barruel and Lassaigne would seem to show that the material of melanosis is a combination of fibrin, fatty matter, and the colouring matter of the blood. But more critical examinations upon this subject are still requisite.

Chemcial analysis.

GENUS V.

STRUMA.

Scrophula.

INDOLENT, GLANDULAR TUMOURS, CHIEFLY IN THE NECK; SUPPURATING SLOWLY, AND IMPERFECTLY, AND HEALING WITH DIFFICULTY; UPPER LIP THICKENED; SKIN SMOOTH; COUNTENANCE USUALLY FLORID.

GEN. V. Synonyms.

THE Greeks denominated this disease ΧΟΙΡΑΣ. the nosologists of recent times SCROPHULA, thus literally translating the Greek, and importing *swine-evil, swine-swellings*, or morbid tumours to which swine are subject. Celsus employs STRUMA, which was common in his own day, and has well described the complaint under this name, which is therefore selected on the present occasion. It is probably derived from στρωμα, "congestion," or "coacervation," as of straw in a litter, feathers in a bed, or tumours in the body; in which last sense Cicero elegantly employs the metaphor in the phrase "struma civitatis," "the scrophula or king's evil of the state." The medical dictionaries and glossaries concur in deriving struma from the Latin *struo*, but the terminating syllable of the noun should rather prove it to issue from a Greek source.

Origin of the term struma.

Distinction attempted between scrophula and struma.

Dr. Stoll endeavoured to make a distinction between scrophula and struma,* by regarding the one as a local, and the other as a constitutional and hereditary disease; but although he has been followed by a few writers, as well in our own country as on the Continent, it is a distinction which has been generally relinquished as neither useful nor founded in fact.

* Prælect. p. 30.

Other animals are subject to this disease besides man. It is, as already observed, from the frequency of its appearance among swine that the Greek name, as well as the more recent one of scrophula, is derived. Among horses we meet with it at least as often, when it is called farcy; under which modification it is propagable by transfusion of blood from the diseased horse, not only to other horses, but to asses also, as has been lately proved by Professor Coleman, at the Veterinary Institution. Sauvages, who has many species under the generic character, has two for the forms now referred to. The porcine species he denominates scrophula *Chalasis*, and the equine s. *Farcimen*.

GEN. V. Struma, Scrophula.

Disease found in other animals than man.

in horses called farcy.

Analysis of Sauvages.

Chalasis and Farcimen, what.

As it is not the intention of the present work to notice the diseases of other animals, otherwise than by an occasional and incidental glance, we shall proceed to a contemplation of the present genus under the single species of

1. STRUMA VULGARIS. KING'S EVIL.

The strumous and mesenteric decline, in the present classification atrophia *strumosa*, is often introduced as a second species: but though nearly allied to the present genus, it has so much closer a connection with all the subdivisions of the genus MARASMUS, and especially with that of atrophia, that the former is evidently its proper place; and we have accordingly treated of it under that genus. In Dr. Cullen's Synopsis, it is arranged under the genus scrophula; and in deference to his authority it was allotted a like position in the first edition of the Nosology of the present writer: but in the subsequent editions it will be found transferred to the position before us.

Mesenteric decline more properly appertains to the genus marasmus, where it has been given.

SPECIES I.

STRUMA VULGARIS.

King's Evil.

TUMOURS CONFINED TO THE EXTERNAL CONGLOBATE GLANDS; PEA-SIZED, OR CHESTNUT-SIZED; APPEARING IN INFANCY OR YOUTH; SUBSIDING ON MATURE AGE; HEREDITARY.

GEN. V. SPEC. I. Disease hereditary.

SCROPHULA though not a contagious disease is unquestionably hereditary:* and hence very generally dependent upon a peculiar diathesis. Yet, like many other hereditary diseases, it is also occasionally generated as a primary affection, without any hereditary taint that can be discovered. I had very lately a gentlemen under my care who has been greatly afflicted with it for many years, and is now chiefly labouring under its sequelæ: for the sores, which are in different glands and joints, and some of which have affected the bones, are healing: yet of eight brothers and sisters who have reached the middle of life, he is the only one who has discovered any tendency to such complaint, nor is it to be traced through any part of the family lineage as far as it can be ascended.

Sometimes ingenerate and original. Illustrated.

In this case not always limited to a particular temperament. Exemplified.

When it occurs as a primary or ingenerated affection it is by no means always limited to any particular temperament or habit of body. The individual just noticed is of moderate stature, brown complexion, dark brown hair, and ruddy face: and I am still occasionally attending a lady who has long been subject to the same complaint without any trace of hereditary predisposition, of a

* Kirkland, On the Present State of Surgery, Vol. II.—Kortum, Comment. de Vitio Scrophuloso. Lemgo, 1789.—Baumes. sur le Virus Scrophuleux, &c.

sallow countenance, dark eyes and hair, and of rather tall and slender make. But where scrophula appears hereditary, and especially where it does not show itself very early, it is often accompanied with a peculiar constitution. "It most commonly," says Dr. Cullen, "affects children of soft and flaccid flesh; of fair hair, and blue eyes; smooth skins, and rosy cheeks; and such children have frequently a tumid upper lip, with a chop in the middle of it; and this tumour is often considerable and extended to the columna nasi, and lower part of the nostrils." And it is a farther remark of Dr. Cullen, but which I have not found to hold very generally, that, where it takes place in children whose parents have given no signs of it, the latter have nevertheless evinced much of the habit and constitution by which the disease is ordinarily characterized.

GEN. V. SPEC. I. Struma vulgaris. King's evil. Where hereditary often accompanied with a peculiar diathesis. Its character.

From all this we have a clear proof that king's evil is a disease of debility, operating by a specific influence on the circulating, and particularly on the lymphatic system.* Whether this influence be the result of a specific matter is by no means so clear; however common the opinion. It is also a general belief that this specific matter is from the first a specific irritant or acrimony. But this at least is a mistake: for the disease is accompanied throughout with diminished, instead of with increased irritability;† and hence the power producing it must be of a sedative rather than of an exciting or acuating quality. And it is in this diminution of irritability that scrophula differs from all other atonic diseases, since the debility and the irritability generally augment in like proportion, and maintain an equal march.

Disease of debility operating specifically on the lymphatics; but whether by a specific matter not clear. If a specific matter not a specific irritant, as scrophula is marked with decreased irritability.

Early life is peculiarly characterized by an abundance of albumen, as its maturity is by an abundance of fibrin. Dr. Parr ascribes the scrophulous diathesis to a redundancy of albumen at this period, together with an excess

Parr's hypothesis of the remote cause.

* Garn, Krankengeschichten. p. 121.

† Richter. Chir. Bibl. Band. VIII. p. 501.

GEN. V. SPEC. I. Struma vulgaris. King's evil.

of oxygene, and a deficiency of azote, evidenced by the florid hue of the countenance. By this hypothesis he obtains a sort of lentor in the circulating system; and accounts for the origin of scrophulous tumours by arguing that, since the mobility of the lymphatic system is peculiarly affected and diminished, the viscid fluids will be most disposed to stagnate there, and particularly in the lymphatic glands; as they must necessarily stagnate most where the impelling power is least.

Hence, little support to the doctrine that originates tubercles from inflammation

It is here, indeed, rather than in any other modification to tubers or tubercles, that we find most to oppose to the opinion of those physiologists, as M. Broussais, and Dr. Alison, who ascribe the origin of all tubercles to the existence of a higher or lower degree of inflammation. Yet it is singular that, at the same time, we here meet with proofs of the most advanced state of a living action in the morbid growths themselves; the most perfect specimens of vascularity and sensation; and particularly where they originate in a glandular texture, which is their proper seat. This living property, however, they do not seem capable of retaining long; for they soon run through their career of vitality, and become decomposed. Such was the short-lived date, according to the first physiological poet of Rome, of those monster-growths which sprang in the infancy of the world, but were soon cut off by nature, as incongruous with her laws, and hateful to her survey.

Yet a more advanced living action in scrophulous than in other tubercles.

But retained only to a short time.

Illustrated.

> Cætera de genere hoc monstra, ac portenta creabat,
> Nequidquam; quoniam Natura absterruit auctum;
> Nec potuere cupitum ætatis tangere florem,
> Nec reperire cibum, nec jungi per Veneris res.*
>
> These sprang at first, and things alike uncouth:
> Yet vainly; for abhorrent Nature quick
> Check'd their vile growth; so life's consummate flower
> Ne'er reach'd they, foods appropriate never cropp'd,
> Nor tasted joys venereal.

Probably formed from a deposit of albumen.

As occurring in early life, when, as we have already observed, there is a peculiar abundance of albumen, with

* Lucret. De Rer. Nat. v. 845.

a comparatively less portion of fibrin or coagulable lymph, it is highly probable that a morbid deposition of albumen forms the commencement of the strumous tuber. And such indeed seems to be proved by the chemical tests to which Dr. Abercrombie has put them.* It is at first, perhaps, deposited in a soft state, and involved in the structure of the gland; the gland being, in other respects, vascular and organized, and probably capable of performing its functions. As the disease advances, the proportion of albumen seems to increase, while at the same time it assumes a more concrete and structural figure, and evinces a vascular and sensitive character. "In this first state of enlargement," says Dr. Abercrombie, "these glands present, when cut into, a pale flesh-colour, and an uniform, soft, fleshy texture. As the disease advances the texture becomes firmer, and the colour rather paler. In what may be regarded as the next stage, we observe portions that have lost the flesh-colour, and have acquired a kind of transparency, and a texture approaching to that of soft cartilage. While these changes are going on we generally observe, in other specimens, the commencement of the opake white structure which seems to be the last step in these morbid changes, and is strictly analogous, in its appearance and properties, to the white tubercle of the lungs. In a mass of considerable size we can sometimes observe all these structures, often in alternate strata: some of the strata being composed of the opaque white matter, others presenting the semi-pellucid appearance, while, in other parts of the same mass, we find portions which retain the fleshy appearance. In the most advanced stage the opake, white, or ash-coloured tubercular matter is the most abundant, and this afterwards appears to be gradually softened, until it degenerates into the soft, cheesey matter, or ill-conditioned suppurations of amiliar to us in affections of this nature." The morbid growth,

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Chemical commencement and progress.

Different stages.

Stages sometimes co-ordinate.

* On the Nature and Origin of Tubercular Diseases. Trans. Medico-Chir. Soc. Edinb. Vol. I. p. 686.

GEN. V. SPEC. I. Struma vulgaris. King's evil.

therefore, as it recedes from its more vascular and vital elaboration, gradually subsides into the simple pretension of coagulated albumen, of which it consisted at first. In the second stage the part is probably susceptible of active inflammation, and healthy suppuration, or suppuration making a near approach to that of a healthy character. In its closing stage, it seems incapable of healthy action, and only passes into that peculiar state of softening which arises from a simple decomposition of the tubercular organization.

Hence some insight into the different natures of strumous and other tubercles.

We have already described at some length the probable origin of tubercles in other textures, chiefly in the serous and mucous membranes of organs, and in the structure of the lungs. The remarks now offered will enable us in some degree to judge in what respect the tubercles of proper glands, as those of the lymphatics and the mesentery, are assimilated to these, and in what respects they differ from them. The subject, however, is still open to inquiry, and much remains to be accomplished before a full and satisfactory result is likely to be obtained.

Be the proximate cause of scrophula, however, what it may, as the remote cause is of a debilitating kind, we can readily see what are likely to prove occasional and co-operative causes; or those calculated to call the remote cause into a state of activity. They must consist of every thing that directly lowers and reduces the tone of the living fibre, and puts the system out of that state of firm and vigorous elasticity which is the best prophylactic against the disease, and keeps the scrophulous diathesis most effectually in a state of subjection. And hence we find the common debilitating powers of cold, damp, meagre or unwholesome food, want of cleanliness, and a close and suffocating atmosphere, the most usual incidental sources of strumous affections.*

Occasional causes.

Whatever reduces the tone of the system.

But for these, a scrophulous predisposition might re-

* Treatise on the Nature and Treatment of Scrophula, &c. By Eusebius Arthur Lloyd, &c. 8vo. Lond. 1821.

main dormant in the constitution through the whole of life; and descend to, and disorder the next generation, without having in the least disturbed the present. But the moment any of these occasional causes become adjuncts with the scrophulous diathesis, scrophula, rather than any other disease they are also calculated to promote, will make its appearance, and commence its ravage. And hence the frequency of this disease in large manufacturing towns, and in higher and colder latitudes than 45°.

GEN. V. SPEC. I. Struma vulgaris. King's evil.

Heat, as a relaxing and debilitating power, tending to produce languid action, is also a frequent cause wherever this power is applied in excess and habitually: and particularly where, like cold, it is combined with sudden variations of temperature. It is hence that scrophula is no unusual attendant upon Hindoos, Hottentots, and Negroes: and especially in the children of settlers in intertropical regions, upon their quitting such regions for countries of a milder temperature, and which but for the previous influence exerted on their frames, would prove one of its most powerful preventives. The influence of excessive cold, however, is much more rapid than that of excessive heat, and far more obvious to the senses. Yet it is often sustained with impunity where the constitution is firm, and the cold rarely subject to vicissitudes; and especially where there is no other debilitating cause to contend with, as the depressing passions, a sedentary occupation, scanty and innutritive diet, damp and impure air, or any kind of personal neglect or uncleanliness. And it is on this account we meet with a far smaller proportion of scrophula in early life among the peasantry of higher latitudes and mountain-scenery, as that of Scotland and Switzerland, than among the mechanics of crowded and warmer cities. "I was told," says Dr. Alison, "by one of the physicians of the Hôpital des Enfans Malades, at Paris, where upwards of five hundred children die annually, whose bodies are almost uniformly opened, that he believed nearly one half of the bodies he saw opened had scrophulous tubercles in some part or

Heat a cause when excessive or variable.

Scrophula common to Hindoos, Hottentots, and Negroes.

Influence of cold more rapid and obvious than that of heat.

But in certain circumstances sustained with impunity.

Hence less scrophula in cold mountainous regions than crowded cities.

Hôpital des Enfans Malades.

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other."* This is indeed a higher aggregate than is to be found in the metropolis of our own country, and obviously includes mesenteric or strumous tubers, of which we have treated already, as well as every other modification of scrophula. But the same writer calculates from data furnished by Dr. Perceval, that the proportion of scrophulous fatal cases among children at Manchester, at the time Dr. Perceval wrote, generalizing them as above, could not be less than a third of the whole infantine mortality; whilst at Waverton, a country parish near Chester, it appears from the same documents that the deaths from scrophula, in children under five years of age, did not amount to a fourth part of this proportion. In the bordering village of Reyton the difference appears to have been still greater; for the whole mortality of children under five years of age in this last parish, compared with the same period of parallel mortality at Manchester, was only as two to seven; not more than one-seventh part of the children born in this village appearing to die before they had attained their fifth year. "I examined lately," says Dr. Alison, "a register which I know to have been kept with great accuracy for nearly four years, of the deaths of a country parish in Scotland, that of Rafford, near Forres, the population of which parish is almost exactly a thousand persons. Of forty-two deaths that had occurred in that time, two only, or one in twenty-one, were below the age of two, and three only, or one in fourteen, below that of five years:" while in the town of Manchester, to which we have just referred, Dr. Perceval assures us, on an average of twenty years, that the proportion of deaths under two years to the whole deaths was 1 to 2.9.†

London.

Manchester compared with the village of Waverton:

with that of Reyton.

Rafford.

Hence, scrophula a disease of weak vascular action.

To add any thing further is unnecessary. Scrophula is manifestly a disease of weak vascular action, and is sure to be found in abundance where other diseases consociate

* On the Pathology of Scrophulous Diseases. Trans. Medico-Chir. Soc. Edin. I. p. 383.

† Perceval's Works, Vol. III. p. 107

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that issue from the same soil, and largely to add to their fatality. Extreme heat and cold, though powerful predisponents, are far more injurious when flowing in irregular vicissitudes than when in an uniform tenour, and the mischievous effect of the latter is often counteracted where combined with the tonic powers of a pure and dry atmosphere, a regular plan of diet and exercise, the salubrious exhalations from growing vegetables, and the grateful stimulus of their odours in village-scenery.

Heat and cold chiefly injurious from irregular vicissitudes. The evil of cold counteracted by various tonic powers of a country life.

For the reasons just urged, scrophula has, at times, been called into activity by local injuries, the depressing influence of severe grief, or a sudden reverse of worldly prosperity. It is also sometimes joined with, or follows rickets; and is frequently a sequel of small-pox, yaws, and several obstinate cutaneous affections.

Local injuries. Depressing passions. Adverse fortune.

But though scrophula usually commences in the lymphatic glands it often extends beyond them: as gout, that ordinarily shows itself first in the small joints, and rheumatism that begins in the large joints, spread not unfrequently to the membranes and the muscles. I have said that under the influence of the scrophulous diathesis the circulating system is weakened generally; and hence also we frequently find the eyes, the mucous glands of the nose, the tonsils, and even the joints and bones successively yielding to its influence.

Extends beyond the lymphatic glands; to the eyes, nose, tonsils, and other organs.

The disease for the most part shows itself early in life, though rarely before the second, and commonly not till the third, year of infancy; from which period it continues to prey on the system till the seventh, when, in ordinary cases, it gradually subsides and disappears. If the predisposition be not considerable the attack is sometimes postponed till after the seventh year, and has occasionally been retarded till the age of puberty, after which, however, we have very seldom any manifestation of the disease.

Origin and progress of scrophula.

The first tumours we meet with are usually upon the sides of the neck, below the ears, or under the chin; confined to the lymphatic glands in these parts, and only

Diagnosis and advancing symptoms.

GEN. V. SPEC. I. Struma vulgaris. King's evil.

spreading to the salivary when the disease has considerably advanced. The tumours are, perhaps two or three in number, moveable, soft and slightly elastic, of a globular or oval figure, without pain or discolouration of the skin. In this state they continue for a year or two: after which they grow larger, and become more fixed; and acquire a purplish redness. They then give that feeling of greater softness, and at length of fluctuation, to which we have just adverted; after which the skin, in one or more of them, becomes paler, and a peculiar liquid is poured forth at several small apertures, apparently like immature pus, but growing daily less purulent, and at length assuming a cheesey or curd-like form. The tumour or cluster of tumours then subsides; but others rise in the neighbourhood; and in this manner the disease proceeds, fresh tumours forming, chiefly in the course of the spring, as the older disappear, and the same process is continued for several years: after which the ulcers heal spontaneously with puckered and indelible indentations, provided the disease terminates favourably: but if not, other parts of the system, as we have already observed, become tainted with the morbid influence, and add to the sum of distress. If the attack fall upon the eye-lids they become inflamed, are swollen and red, and pour forth, from their minute glands, an erosive but viscid secretion which glues them together at night, so that in the morning they are opened with difficulty. The adnata partakes of the irritation which is at length communicated to the whole globe of the eye, and not unfrequently to the cheek, from the acrid discharge that flows down. An unsightly lippitude and eversion of the lower eye-lid is hence a very common result of a scrophulous attack on this organ.

Fixes sometimes on the limbs, ligaments, and bones.

In like manner the disease, in this unfavourable and aggravated state, often makes its assault on the limbs, and fixes on the ligaments, cartilages, or even the bones themselves; and particularly whenever any injury occurs to a joint. An indolent tumour first shows itself which tardily advances in magnitude with a kind of smothered inflam-

mation, and at length opens on the surface from one or more minute ulcerations which discharge the sanious kind of fluid we have already noticed. And it is here we perceive how nearly scrophula is related to hydarthrus or white-swelling; and how readily the former may become a cause of the latter, as already observed under that species. If the strumous diathesis be excited by the fracture of a bone the broken ends unite with great difficulty, and sometimes not at all. A specific tumour forms in the seat of the injury, the soft parts are often affected with a weak inflammation, and ulcerate slowly; and the bone is rendered carious. If the injury occur in the middle of a cylindrical bone an exfoliation may take place in a long course of time; but if at its extremity, it will become spongy, enlarged, and disorganized. If a cure be at length effected, the enlargement will remain and the articulation be lost: yet amputation will be of no use while the part continues under the influence of the scrophulous taint.

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Nearly related to white-swelling.

In the worst and severest stage of the disease, the entire system appears to be contaminated; hectic fever ensues, and sometimes tubercular phthisis which gradually puts an end to the contest.

Sometimes the entire system contaminated.

In attending to the cure, we must not be unmindful of the principle we have endeavoured to establish, that scrophula is a disease of debility, principally affecting the lymphatic system, accompanied with diminished irritability. And it hence follows that our chief dependence must be upon a tonic and stimulant plan, so modified as to meet the patient's age, idiosyncrasy, and manner of life.

Principle to be attended to in attempting a cure.

Modified tonic and stimulant plan.

How far an acrimonious principle may be generated, after the disease has become aggravated and general, it is difficult to say: but in its commencement, and while confined to the lymphatic glands, and, indeed, through the whole of its ordinary and milder course, it induces diminished rather than exalted irritability, and consequently gives no proof of an actuating or acrimonious source. Yet such a source has been supposed even from its first ap-

Different kinds of stimulants.

How far an acrimony is generated in an aggravated state of the disease.

Sedatives and narcotics why employed.

GEN. V. SPEC. I. Struma vulgaris. King's evil.

pearance: and hence sedatives and narcotics have found a place among the most celebrated of its remedies: while, as the chemical character of the acrimony has been also pretended to be developed, and has been declared to be a specific acid, another class of remedies had recourse to has been the alkalies.

Alkalies why employed.

Often of use though not as correctors of acidity, but as stimulants.

That the latter are often of considerable service ought, I think, freely to be admitted; but we have assuredly no proof that they become beneficial as correctors of acidity. They are gentle stimulants admirably adapted to the debilitated and indolent condition of the vascular system they are intended to excite: and hence, in whatever form they are given, have a chance of doing good. And it is to this principle we are perhaps to resolve all the advantage that has been stated by different writers, and in different ages of the world, to have resulted from the use of burnt-sponge, burnt cuttle-fish, shells of all kinds, burnt hartshorn, and even burnt secundines, which last were at one time in high request, and are to be found as a sovereign remedy in Schroeder's Pharmacopœia.* All these have in our own day deservedly yielded to the carbonate of soda, or sub-carbonate of ammonia: which, in a more elegant and concentrated form, offer whatever virtues may be contained in the older medicines; and still more lately to the different preparations of the alkali, not long ago detected by M. Courtois in kelp and other salt-worts, and denominated iodine; for a more particular account of which, the reader may turn to the treatment of BRONCHOCELE.† The author has, at this moment of writing, among other patients, who have been benefited by this plan, a lad about thirteen years of age with weak eyes, inflamed and irritable conjunctiva, and such an enlargement of the parotid gland on each side as to make them nearly meet, so that the mouth opens with uneasiness. He has now applied the ointment of iodine for three weeks,

Carbonate of soda.

Sub-carbonate of ammonia.

Iodine.

Exemplified.

* Lib. v. p. 263.

† Vol. IV. Cl. VI. Ord. I. Gen. II. Spec. I. Emphyma Sarcoma Bronchocele.

and at the same time taken half a grain twice a-day in the form of a pill, and is essentially improved in every respect. GEN. V. SPEC. I. Struma vulgaris. King's evil.

Lime-water, and the muriate of baryte, which last was thought by Dr. Adair Crawford to be nearly a specific, if they have any pretensions whatever, can only derive them from the general principle of their being stimulants, and especially of the lymphatic system. And the same may be observed of petroselinum, sarsa, mezereon, balsam of sulphur, calamus aromaticus, and horse-radish, all of which have had their votaries in their day. Lime-water. Muriate of baryte. Other lymphatic stimulants.

Muriate of soda or common sea-salt possesses a like character; and has undoubtedly been found of far more use in many cases. It has, hence, been employed very freely both internally and externally. In the latter case very generally through the medium of the bibulous marine plants, which contain it in a larger proportion, and have been applied to the strumous tumours in the form of epithems as sea-wrack (fucus *vesiculosus:)* sea-tang (alga *marina,)* and sea-oak (quercus *marina.)* Muriate of soda. Bibulous marine plants as external stimulants.

The mineral waters of every description, have in like manner been had recourse to, chalybeate, sulphureous, and saline; and, perhaps, as Dr. Cullen observes, with nearly a like reputation and success; though it is by no means improbable that some waters may prove a more remedial stimulant or alterant to some constitutions, and others to others. And we thus possess a more plausible reason for their being advantageous than that offered by Dr. Cullen; namely, that "if they are ever successful it is the elementary water that is the chief part of the remedy:"* which he tells us in another place "may be of use by washing out the lymphatic system."† Mineral waters.

Stimulant external applications, besides sea-water, have also been tried, and undoubtedly been often found serviceable; as a long continued friction of the hand over Supposed useful by Cullen from their waters alone.

* Pract. of Phys. Vol. IV. MDCCLII.

† Id. Vol. IV. MDCCLI.

GEN. V. SPEC. I. Struma vulgaris. King's evil.

the scrophulous protuberances, mercurial or ammoniacal plasters or the convenient form in the London Pharmacopœia that combines both these ingredients; irritant ointments, the aura of voltaism, or moderate shocks of electricity.

Other external stimulants.

Mercurial.

Electricity.

The means of this kind, however, to which we have recourse, whether external or internal, should always be gentle at first, however we may venture upon augmenting them afterwards. If we stimulate violently, we shall do mischief rather than good, and add to the debility instead of diminishing it. Scrophula is a strictly chronic disease; it never has been, and never can be cured rapidly; and wherever any beneficial influence has been produced upon it, it has always been, as in the use of the alkalies, and of mineral waters, by lenient means and patient perseverance.

Excitement at first should be gentle.

Different kinds of tonics.

But we have to increase the power as well as to take off the irritability: and hence tonics seem to be as much demanded as stimulants; and have in fact been as generally made use of.

Colts-foot mostly depended on by Cullen.

It is very singular that of this class of medicines the only two which Dr. Cullen has thought it worth while to notice are bark and colts-foot; of the first of these, he speaks very doubtfully; while he seems to depend more on the second than on any other remedy whatever. This opinion he expresses in his Practice of Physic, published in 1783; but, in his Materia Medica, published six years afterwards, he gives it the same high character, and tells us that he was induced to try it in scrophulous cases upon the testimony and recommendation of Fuller. He employed both an expressed juice of the fresh leaves, and a decoction of the dry: but preferred the former, of which he gave "some ounces every day," and affirms that "in several instances it has occasioned the healing up of scrophulous sores." He admits, however, that neither of them were in some trials sufficiently effectual.

Metallic salts.

The metallic salts have been more generally used, and have at least acquired a higher reputation; though, with

the exception of calomel, I do not know any of them that can appeal to any decided testimonies in proof of their success; and even calomel may perhaps be regarded rather as an alterant or mild stimulant than as a tonic. Salivation has always done harm; and on this account also mercury in every form must be given in minute doses. Combined with some preparations of antimony, and particularly with the precipitated sulphuret, as in Plummer's pills, it is said to have been chiefly serviceable. But in my own practice I have not found this medicine of any manifest service in the present disease.

GEN. V. SPEC. I. Struma vulgaris. King's evil. Calomel. Salivation injurious. Plummer's pill.

The acids have also been tried, but are of little or on avail. They who regard the scrophulous taint as consisting in an acid acrimony, are apt to lay hold of this fact in support of their hypothesis. A better reason for their inefficacy is perhaps to be found in their sedative property which we had occasion to notice at some length when treating of phthisis.

Acids.

Upon the whole, however, the tonic class of medicines has thus far proved considerably less decisive and important in the treatment of scrophula than we might fairly have conjectured. Yet a tonic regimen of sea-air, sea-bathing, liberal exercise, and a diet somewhat generous, is of the highest consequence in promoting improvement, and ought by no means to be dispensed with. The Infirmary at Margate is on this account a noble institution, and cannot be too liberally supported.

Tonic medicines hitherto tried, not highly useful. Tonic regimen more serviceable.

Of the specific benefit of narcotics, as hemlock, henbane, foxglove, solanum, asclepias, vincetoxicum, and many others, I have yet to be persuaded. They may possibly be of some use in quieting the irritation occasionally produced by congestion and mechanical pressure where the tumours are peculiarly indurated and large; and in such cases may assist in softening and diminishing them. And they may perhaps operate in the same way where, in the later and more malignant stages of the disease, the secretion is become virulent, the open ulcers irritable, and a foundation is hereby laid for hectic fever.

Narcotics. may at times do good:

GEN. V. SPEC. I. Struma vulgaris. King's evil.

but often disappoint.

But I can conscientiously say, with Dr. Cullen, that they have often disappointed me, and have not seemed to dispose scrophulous ulcers to heal.

Local applications where the tumours have broken.

The local applications, like the internal remedies, should be slightly stimulant; and where the tumours have broken, usually consist of digestive ointments combined with the caustic metallic salts of mercury, zinc, or copper; and of digestive lotions of a dilute solution of alum or nitrate of silver. These are well calculated to coincide with the general intention; but we must not expect a sound cure till the morbid impression is set at rest in the constitution, or utterly extirpated from it.

GENUS VI.

CARCINUS.

Cancer.

SCIRRHOUS, LIVID TUMOUR, INTERSECTED WITH FIRM, WHITISH, DIVERGENT BANDS, FOUND CHIEFLY IN THE SECERNENT GLANDS; PAINS ACUTE AND LANCINATING; OFTEN PROPAGATED TO OTHER PARTS; TERMINATING IN A FETID AND ICHOROUS ULCER.

GEN. VI. Only one known species.

Of this genus there is but one known species: for the division into occult and open, or indolent and ulcerative, introduced by Hippocrates and continued till the time of Boerhaave, is unnecessary in pathology, and incorrect in a nosological arrangement; as the distinctions it contemplates are nothing more than so many stages or modifications of the same disease in different habits, or affected by different concomitants. This species is what is generally described under the name of

1. CARCINUS VULGARIS. COMMON CANCER:

and it is not necessary to alter the term.

SPECIES I.

CARCINUS VULGARIS.

Common Cancer.

TUMOUR BURNING, KNOTTY; WITH DARK, CANCRIFORM VARICES; ULCER, WITH THICK, LIVID, RETORTED LIPS.

GEN. VI. SPEC. I. Fungus hæmatodes; sometimes called a cancer, but not strictly so.

THERE is a soft, fungous and bleeding ulcer, possessing the name of fungus hæmatodes, which has by many writers of celebrity been supposed to be of a cancerous origin; and under their authority it has been so regarded in the author's volume on Nosology: but as it seems to differ from cancer in its constitutional influence and in some of its local characters, it is better to contemplate it as a malignant ULCER of a peculiar kind: and in the present work it is referred to that genus accordingly.

Subdivisions of different writers: Bierchen gives five.

Some writers have offered many other subdivisions, which are still less entitled to a distinct enumeration; as Bierchen, who has given us five, under the names of the genuine, the strumous, the syphilitic, the fungous, and the noma.* Of these, the first constitutes the species before us; the second and third are modifications of the same, only varied by the idiosyncrasy or incidental state of the constitution; and the last two are depraved ulcers.

Origin of the generic term.

The term carcinus (καρκινος) is Greek, and imports a crab; the disease being thus called from the cancriform or crab-like ramifications of the dark, distended veins of the cancerous tumour. The question is of some consequence whether cancer be a constitutional or a local, whether an hereditary or merely an occasional, disease. Much

* Abhandl. von den wahren kennzeichen des Krebsschädens, &c. Goet. 1775.

has been said, and well said, on both sides. Till of late years the disease was generally regarded as a constitutional affection, and will, for the most part, therefore, be found in the division of cachexies from Sauvages to Macbride, though Dr. Cullen has introduced it into his class *locales;* and since his time many of the best writers of the present day, among whom are Dr. Baillie and Mr. Abernethy, concur in regarding it as local alone. If the disease be merely local it is difficult, and perhaps insuperably difficult, to say why a blow on a conglomerate gland, as the breast for example, should sometimes produce a cancer, but more generally not: or what that power is that excites the cancerous action in one person, from which another, or perhaps a hundred others, remain free upon an application of the very same injury to the same organ. A blow on the knee often produces a white-swelling; but ten thousand children receive blows on the knee without any such effect following. In this case we resolve the difference of result, without a controversy, into the presence or absence of a scrophulous constitution: and without this view of the subject we should find ourselves at a loss for an answer. And unless we apply the same reasoning to cancer, we shall ever, I fear, remain at an equal loss. The cases, moreover, in which cancerous tumours are found in other parts of the body, after one or more than one has been extirpated, lead us by an easy thread to the same conclusion, provided the tumour has been removed in an early stage of the disease, and before ulceration has taken place; for it is possible that the specific matter of a cancer, generated and matured locally, may be absorbed and deposited on the organs which are afterwards affected. But if the extirpation have taken place before the formation of the specific matter, it is not easy, except by a constitutional taint, to account for any subsequent appearances.

GEN. VI. SPEC. I. Carcinus vulgaris. Common cancer.

Cancer whether constitutional or hereditary or merely local.

Formerly generally regarded in the first view:

more lately in the second.

Difficulty attending the second view when applied universally, and leading to the idea of a constitutional affection.

It is still stronger in proof of an hereditary predisposition that various members of the same family have exhibited the same disease either simultaneously or in suc-

Other arguments in favour of a constitutional affection.

GEN. VI. SPEC. I. Carcinus vulgaris. Common cancer.

cession; and that the descendants of those who have been afflicted with it seem to have more frequently suffered from it than others. It is not necessary to advance individual instances in support of these positions, though it may be noticed in passing that Buonaparte died of a cancer in the stomach, his father of a schirrous pylorus.* The same remarks have been made upon a general survey of the disease in most ages; and the doctrine of an hereditary influence has, in consequence, descended to us as a result of such remarks from the time of the Greeks and Romans.

The two distinct views attempted to be reconciled.

The truth seems to be, that cancer, like gout, is dependent upon a peculiar diathesis or state of the constitution, which disposes a schirrous tumour, or any other occasional cause, to produce a cancerous ulceration, and consequently to generate the specific matter of cancer; which matter, once absorbed into the system, even though, by a removal of the local affection and the influence of a healthy habit, it should remain dormant or be kept in subjection, may augment the original predisposition, and transmit a seminium to the future race.

Whether a constitutional diathesis may be manifested by the features.

How far a predisposition to cancer, whether original or derived, may manifest itself by external signs, I am not able to determine. Such an outward character is by no means constant in the list of hereditary diseases. It is, perhaps, generally visible in those that affect the mind; but far less so in those that affect the body. In phthisis, the predominant diathesis has a striking exterior; in scrophula, the outward and visible sign is far less distinct, though such a sign seems to prevail generally: in gout, there is no specific exterior that we can depend upon. Dr. Parr, however, has conceived that cancer has its outward character as well as phthisis, and that it is indelibly marked in the complexion: "for we have found," says he, "cancers more frequent in the

Such manifestation not to be found in all hereditary predispositions:

but suspected by Parr in cancer.

His outlines of it.

* Account of the last illness, decease, &c. of Napoleon Bonaparte. By Archibald Arnot. 1822.

dark cadaverous complexions, than in the fairer kind. The complexion we mean is distinct from the darkness of the atrabilious or melancholic habits: a blue tint seems mixt with the brown, and is chiefly conspicuous under the eyes, or in the parts usually fair. This may, perhaps, be a refinement without foundation, but we think we have often observed it. There is certainly no constitutional symptom by which it can be predicted, if, in women, a scanty and a dark-coloured catamenial discharge be not a prognostic of the future disease. Cancer has certainly been traced in females of the same family; and those who have escaped suffer from irregular anomalous pains, and different, often unaccountable, complaints."* The picture thus ingeniously drawn, is worth bearing in mind, but I have never been able sufficiently to appropriate it; and in the last two or three cases of cancerous breasts that have occurred to myself, the patients have been of fair complexion, and light hair: one of them, indeed, peculiarly so: the lady was about fifty, and had had a large and very handsome family, all of whom were so fair as to make a near approach to the phthisical exterior, though none of them have ever exhibited its pathognomics.

GEN. VI. SPEC. I. Carcinus vulgaris. Common cancer.

Does not hold uniformly.

Cancer has also been imagined by many practitioners of high respectability to be contagious; of whom we may mention Bierchen, Sinnert, and Gooch: but there seems no sufficient ground for the continuance of such an opinion. Inoculation has been said to have produced the complaint; but, like many other specific acrimonies, it does not act very readily in this way, even if it act at all: for M. Alibert affirms that he inoculated both himself and several of his pupils, without any other effect than that of local inflammation; and that even this did not always ensue.† It has been swallowed by dogs without any mischief.‡

Cancer whether contagious.

No sufficient ground for such a belief.

* Med. Dict. in verbo.

† Maladies de la Peau, &c.

‡ Le Febure, Remede, &c. 1776.

GEN. VI. SPEC. I. Carcinus vulgaris. Common cancer.

The parts most usually affected by cancer are the excretory glands, and especially those that separate the fluids to be employed in the animal economy, rather than those that secern the excrementitious part of the blood. The lymphatics are seldom primarily affected, though they may become tainted from their contamination with a cancerous part. "I never yet," says Mr. Pearson, "met with an unequivocal proof of a primary (cancerous) scirrhus in an absorbent gland."* And hence we behold a striking difference between the nature of cancer and scrophula. But though the secernent glands are most open to the attack of cancer, any part of the body may become its seat. We meet with it, however, chiefly in the breasts of females, the uterus, the testes, the glans penis, the tongue, stomach, cheeks, lips, and angles of the eyes. The obstruction commences in the minuter vessels; and the adjacent parts are affected in consequence.

Parts of the body most usually affected.

Lymphatics not readily affected.

Women more subject than men.

Women are more subject to cancer than men; and in these the mammæ and the uterus are the organs most predisposed to its influence. Celibacy, as well as the cessation of the menses, conduces to its production or appearance; and hence antiquated maids are mostly affected with it; and next to these, mothers who have not suckled their children, for we may lay it down as an axiom, in the language of Dr. Parr, that a milk abscess never becomes a cancer. Then follow women who are past child-bearing. And lastly, women who have borne children and suckled them with their own milk, and males incidentally exposed to its occasional causes. To which we may add, that when cancer occurs in men it is chiefly in the lips, and when in children, in the eyes.

When men are attacked, the lips chiefly suffer: when children, the eyes.

Remote causes unknown.

Of the remote cause of cancer we know nothing. While scrophula has been supposed by some to be the result of an acid acrimony; cancer has by others been supposed to be produced by a peculiar alkali. Dr. Crawford, from a series of very curious experiments upon the matter of

By some, a peculiar acid supposed: by others, a

* Principles of Surgery, &c. Vol. I. p. 209, &c.

cancer, thought he had ascertained this to consist principally of hepatised ammonia, and found that this matter effervesced with sulphuric acid.* Ploucquet, however, affirms that it sometimes effervesces with alkalies as well.† The taste discovers nothing; for to the tongue it is insipid and mawkish rather than acid or alkaline. Yet Parr, laying hold of Crawford's experiments, has boldly ventured to assert that the remote cause, or rather the cause of the cancerous diathesis, consists in an excess of ammonia with a redundant developement of sulphur.

GEN. VI. SPEC. I. Carcinus vulgaris. Common cancer.

peculiar alkali.

Crawford's hypothesis.

Parr's hypothesis.

When it was popular in the Linnéan school to resolve almost all diseases into the irritation of worms, grubs, or insects existing parasitically in different organs of the body, cancer was by some theorists supposed to depend upon a like cause: and the hypothesis has been since adopted by several writers in our own country, as Mr. Justamond who ascribed it to the larves of a particular species of insects, and Dr. Adams, who referred it to hydatids.‡ Vermicles or the larves of insects have at times been found in the open ulcer of a cancer, as in the fetid discharge of many other malignant ulcers. These, as in other cases, have undoubtedly proceeded from eggs deposited in the sore as a nidus, though the worm or insect that has so deposited them has never been detected. Such appears to be the foundation of this hypothesis, which we have no authority for carrying farther, and which is rarely advocated in the present day.

Ascribed to vermicles or larves,

by Justamond and Adams.

The occasional or exciting causes are numerous; but to account for their efficiency it seems indispensable, as we have already observed, to suppose the existence of a cancerous predisposition or diathesis, since we see the same causes acting in innumerable instances daily, without betraying any tendency to such a result. Where this is present it may be produced by an external injury upon

Occasional causes numerous, where a predisposition exists.

* Phil. Trans. Vol. LXXX. 1791.

† Init. Biblioth. Tom. II. p. 202.

‡ Observations on Morbid Poisons

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any of the parts most susceptible of cancer; by an indurated and chronic tumour incidentally inflamed or irritated: an accumulation of acrid filth in the rugæ of the skin which is a frequent cause of cancer in the testes, and particularly among chimney-sweepers: the hard and pungent pressure of a wart or corn in an irritable habit, of which the medical records offer various examples; the acrimony of an herpetic eruption; the general disturbance produced in the system by a severe attack of small-pox, or several other exanthems; a sudden suspension of a periodical hemorrhoidal flux and a cessation of the menses; and, when in the stomach, by a previous life of ebriety or irregular living. With these severe cold seems also to co-operate, as the disease is generally admitted to be both more frequent and more virulent in the high northern latitudes than in the southern regions of Europe.

Cancer of the breast.

When cancer takes place in the breast, it usually commences with a small indolent tumour that excites little attention. In process of time, this tumour is attended with an itching, which is gradually exchanged for a pricking, a shooting, and at length a lancinating pain, a sense of burning, and a livid discoloration of the skin. And, however difficult it may be to determine the precise point of time in which the scirrhus first becomes converted into a cancer, where these symptoms are united there can be no risk in calling the tumour by the latter name. Adhesive bands are now formed in the integuments which become puckered; while the nipple is drawn inwards by suction, and in some instances completely disappears: the tumour rises higher towards the surface and feels knotty to the finger; at the same time that the subcutaneous vessels are distended with blood and show themselves in dark cancri-form varices. The march of the disease may be slow or rapid, for it varies considerably in its pace; but at length the integuments give way in a few points to the ulcerative process, and a small quantity of caustic ichor, or of lymphatic fluid tinged with blood from the eroded vessels, is thrown forth, sometimes with short and

Progress and general description.

deceitful relief:* the ulcerative process in the mean time advancing, and spreading wider and deeper till a considerable extent of surface becomes exposed, and a broad excavation is scooped out with a discharge of a peculiar and most offensive fetor.† Here again the ulcer sometimes affords a delusive hope of recovery by its granulating; but the granulations are soft and spongy, and not unfrequently bleed from the loose texture of the new vessels, or their erosion by the cancerous matter. It is rarely, moreover, that they extend over the entire surface of the sore: for more generally, while one part is covered with them, another part is sloughing, and each of the parts runs alternately into the action of the other. And not unfrequently the lymphatic vessels become affected as high up as the axillæ, and in their course betray a few smaller tumours. But whether this be a mere result of contiguous sympathy or of cancerous taint, is uncertain. Cancer, as we have already observed, rarely, if ever, commences in lymphatic glands, which show a peculiar indisposition to the power of its seminium; but they, at length, partake of the disease in the course of its ravage: and hence all such suspected tumours are prudently removed when the knife has been resolved upon. Where the disease has spread widely or continued long, some of the muscles of respiration participate in the irritation, and the breathing is performed with difficulty.

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When cancer attacks the uterus it is known by tensive lancinating pains in this organ, shooting through the region of the pelvis; indurations in the part sensible to the touch; a preceding and immoderate leucorrhœa, or menstruation; sometimes both. The ulcerative process, as far as we are acquainted with it, is the same as already

Cancer of the womb.

* Prysschriften Uitgegeven door het Genootsch. ter bevondering der Heelkunde. Amsterdam, 1791.

† On the varieties of Diseases comprehended under the name of Carcinoma Mammæ. By Charles Bell, Esq. &c. See Medico-Chir. Trans. Vol. XII.

GEN. VI. SPEC. I. Carcinus vulgaris. Common cancer.

described; and as soon as it has worked to the surface of the organ, there is a sanious, or bloody, or mixed discharge, characterized by the peculiar stench of the disease. By degrees, the labia swell and become edematous; and if, as sometimes happens, the inguinal glands be obstructed, the edema extends along the thigh; and the ulceration proceeds often to the rectum.*

Cancer in the vagina.

Cancer in the vagina, which, however, rarely takes place, can easily be felt, and in the rectum the distinction is not difficult. The nature of the discharge, and the other symptoms just noticed, are sufficient to decide its existence. It is still more obvious in the penis.

Cancer in the stomach.

None of these symptoms assist us in determining its presence in the stomach: and hence how confidently soever it may be conjectured from the marks of an acute and burning pain, tenderness of the epigastrium upon pressure, nausea, and rejection of food, and even an offensive fetor in the breath, the disease can seldom be completely ascertained till after death. It is sometimes accompanied with vomiting, and sometimes not; and ordinarily the absence of vomiting is an unfavourable sign, as it has often been found to proceed from an induration of the coats of the stomach generally, which has rendered it incapable of contracting, or from a cancerous ulceration and enlargement of the pylorus† which, upon the slightest pressure, readily admits the contents of the stomach into the duodenum. There is here, however, usually habitual nausea, though without vomiting.

Cancer in the testicle.

The progress of cancer in the testicle is often slower than in many other parts.

Chimney-sweepers' cancer.

In chimney-sweepers we can trace an obvious cause, which is that of soot lodged in its rugæ, and irritating as well from its own acrimony as from that of perspiratory fluid with which it comes in contact

* Clarke, Observations on the Diseases of Females, &c. 8vo. 1821.

† Mémoire sur le Vomissement, par M. Piedagnel. &c.—Journal de Physiologie Experimentale, par M. Magendie. Juillet. 1821. Paris.

and forms an union. A painful ragged sore with hard rising edges is first produced; or, sometimes, a little indurated wart; which, from inattention, increases in size, is repeatedly rubbed off by the exercise of climbing, enlarges and deepens its sphere of irritation, grows more malignant, and at length is converted into a real cancer, and affects the whole scrotum or the body of the testis. In whatever part of this complicated organ, however, the disease commences, it is progressively communicated to the rest, the scirrhosity increases in size and hardness; till the tumour often acquires an enormous and irregular magnitude, studded externally with numerous protuberances, and the shape of the testis, even before ulceration, is entirely lost. In the progress of the disease, the spermatic chord becomes affected, and the taint or irritation is communicated more or less to the viscera of the peritonæal or lumbar cavities.

GEN. VI. SPEC. I. Carcinus vulgaris. Common cancer.

From the cancerous effect of a highly irritable wart or crack on the scrotum of chimney-sweepers and smelters of metals, we may derive some idea of the formation of cancers on other superficial parts of the body from a similar beginning. These most frequently occur on the lips, nose, or eye-lids; and oftener from a crack than from a wart. The edges of the sore become hard, and one or more tumours issue from them, which increase in size and gradually evince a cancerous character.

Cancer on the lips.

On the tongue, the same disease sometimes shows itself; and more usually commences with a small wart or pimple near the tip, which hardens by degrees, grows highly irritable and malignant, and, spreading its influence through the entire organs, swells it to a prodigious size, and renders it of a scirrhous induration.

Cancer on the tongue.

These local tumours are seldom entitled to be called cancers on their origin. They are almost always produced, as Mr. Earle has justly observed, by local irritation, and exacerbated by a continuance of the same cause; and hence they rarely give much trouble on extirpation; and, perhaps, never endanger the constitution. A chronic

Such tumours seldom true cancers on their origin.

GEN. VI. SPEC. I. Carcinus vulgaris. Common cancer.

malignancy may, however, convert them into genuine cacinomata.*

Curative means.

Cancer is said, in a few instances, to have terminated spontaneously. De Haen gives us one example of this :† and Parr affirms that he has seen six cases of the same in his own practice. But he adds, in proof of its being a constitutional affection, that in every case the cure was followed by some other disease, as an enteritis, fixed pains in the limbs, a sciatica, or an apoplexy, in one of these cases, the apoplectic attack occurred twice, and the last was fatal.‡

Cancer has terminated spontaneously:

Yet rarely cured except by the knife.

In general, however, a cure is rarely effected but by the knife or a caustic, the use of which it does not belong to the present course of study to explain. Yet the progress of the complaint may perhaps be arrested; and we are often able, without cutting, to render it, at least tolerable, for a series of years. In an early stage of the disease relief may often be obtained by topical bleeding, as with leeches; and topical refrigerant applications, as saturnine lotions, or sheet-lead in very thin layers, as the linings of tea-packages, an application which has of late been brought forward as something new, but which was employed long ago, and may be found recommended in many of the older journals of established reputation.§

Progress may be arrested by medical treatment

Topical bleeding and applications.

Sheet-lead.

Diet and regimen.

The diet should be limited to the mildest nutriment, and wine be sedulously avoided. At this period, indeed, whatever can prevent or lessen inflammation should be seriously studied, and adhered to.

Cured by rigid abstinence.

Ponteau relates the case of a cure produced by rigid abstemiousness alone, the patient taking nothing whatever but water for a period of two months.‖

* On the Influence of local Irritation in the production of Diseases resembling Cancer. By Henry Earle, Esq. F.R.S. Medico-Chir. Trans. Vol. XII. Art. xxii.

† Epist. De Cicutâ, p. 43.

‡ Dict. in verb. Vol. I. p. 329.

§ Eph. Nat. Cur. Dec. I. Ann. IV. V. Obs. 161.

‖ Nuovo Metodo per curare sicuramente ogni Canchero coperto. &c. Venezia, 1750.—Œuvres Posthumes. Tom. I.

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Treatment. In the advance of the disease gentle stimulants externally.

As however, the disease advances, and assumes more of a chronic character, the activity of the smaller vessels may be gently urged, in order to relieve or prevent congestion. And where the irritation is not great we may by degrees apply gentle stimulants also externally, and let the saturnine lotion be superseded by the acetated solution of ammonia, tar-water as recommended by Quadrio, or an illination of the surrounding parts with mercurial ointment, combined with a small portion of camphor.

Internal medicines chiefly narcotics and mineral tonics.

The internal medicines which have been chiefly trusted to for the cure of cancer are the lurid and umbellate narcotics and the mineral tonics: the former apparently for the purpose of taking off irritation, and in some instances correcting the specific acrimony; and the latter for supporting the living power, and thus enabling the system to obtain a triumph over the disease by its own instinctive or remedial energy.

Narcotics differently estimated.

Of the first class the chief have been the bella-donna and hemlock, and particularly the latter, which appears to have been most promising. When Dr. Stoerck of Vienna published his work upon the successful exhibition of hemlock in cases of confirmed cancer, many of which were vouched for by the Baron Van Swieten, every practitioner was eager for examples upon which to try the experiment for himself. Solanum had been in vogue, but was just sinking into disrepute from its numerous failures: and corrosive sublimate was the medicine chiefly confided in at St. Thomas's Hospital. Dr. Akenside, who was at this time prescribing the corrosive sublimate in the hospital, with what he thought a gratifying success, immediately exchanged it for the conium, or cicuta as it was then called. He tried it upon a large scale in every stage and modification of the disease, and at first with the most sanguine expectations; but his hopes gradually failed him as he advanced in the career of his experiments, and he was compelled to make very great drawbacks upon Dr. Stoerck's commendation of the medicine. He allows it, however, a certain portion of merit, and his account is drawn up with

Hemlock, as extolled by Stoerck and Van Swieten.

Fairly tried by Akenside.

GEN. VI. SPEC. I. Carcinus vulgaris. Common cancer.

a degree of candour which entitles it to the fullest confidence, and appears to deal out the real truth. In recent states of the disease, where there was no ulceration, or none of any depth, he asserts that it often produced a favourable termination, and gives numerous examples to this effect. But in inveterate cases, where the cancerous ulcer had made considerable progress, its benefit was very questionable: it operated often for a very few days like a charm, diminished the pains and improved the discharge, but suddenly it failed to do the slightest good any longer unless the dose were very largely increased, upon which a like beneficial effect followed, but unfortunately of equally transient duration. The dose was in many instances again increased, and continued to be so, till at length the symptoms produced by the cicuta were as mischievous as those of the cancer itself, and Dr. Akenside was compelled to abandon it.*

Treatment.

His result: often serviceable:

but in inveterate cases never cures.

Variable reports of others.

We are hence in some degree prepared for the contradictory accounts of its effects which are furnished by different writers. De Haen asserts that it affords neither cure nor relief of any kind;† Bierchen, that it aggravates real cancer, though sometimes serviceable in scrophulous;‡ and Lange, that it is altogether inefficacious.§ Fothergill is friendly to its use;‖ and Bell¶ and Fearon** recommend it both externally and internally, alone or in combination with opium.

Its virus often exaggerated. Failure accounted for in some cases.

For this discrepancy of judgement we have in some measure endeavoured to account. Yet the advocates of the medicine have, doubtless, in some instances, suffered themselves to speak of it in exaggerated terms; and it is highly probable that in others, where it has seemed al-

* Transact. of the Col. of Phys. of London. Vol. I. Art. VI. p. 64.

† Rat. Med. II. 37.

‡ Loco citato.

§ Diss. dubia Cicutæ vexata. Helmst. 1764.

‖ Works, Vol. II. passim.

¶ On Ulcers, Part II. Sect. VIII.

** On Cancers, passim.

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together inefficacious, the hemlock, whether in powder or extract, was administered in an imperfect state. Dr. Cullen gives a striking example of this last fact in a lady who, being very particular in the use of this medicine, employed the powder as mostly to be depended upon, and weighed out her own doses, beginning with a small quantity at a time and proceeding gradually till she took sixty grains at once. By this period her parcel of the powder was exhausted; and she had derived no beneficial effect. She supplied herself, however, with another parcel, and being warned that different samples were rarely of the same strength, she reduced her first dose of the new plant to a scruple: yet even this nearly killed her: for in ten or fifteen minutes she was affected with sickness, tremor, giddiness, delirium and convulsions. Happily the sickness proceeded to a vomiting, and the poison was rejected. But of the fresh supply she was never afterwards able to take more than five or six grains at a dose, notwithstanding she had taken sixty grains of the preceding without any mischief.* Exemplified.

Quantities said to have been given, sometims enormous.

Yet the quantities pretended to be given by some practitioners are far beyond this last amount. Thus, Dease informs us that he gave AN OUNCE AND A HALF of the powder every twenty-four hours,† and performed a cure; and Rostard that his ordinary allowance was six drachms of the extract for the same period, which is a still higher proportion.‡ Warner gave a drachm and a half, and thought it an enormous quantity, without mischief.§

Akenside's statement confirmed generally.

Upon the whole, the balance of experiments seems very much to confirm the candid report of Dr. Akenside. Schaeffer, and many others contend that even its beneficial influence is nothing more than a result of its

* Mat. Med. Vol. II. Part II. Ch. VI. p. 264.

† Introduct. to the Theory and Practice of Surgery. I.

‡ Journ de Med. Tom. XXXVIII. p. 36.

§ Treatise on the Eyes, passim.

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narcotic power: but it does seem, in some instances, to act as a discutient, and to improve the quality of the secretion as well as to relieve the pains. Dr. Cullen advances further, and tells us that he has found it, in several cases, make a considerable approach towards healing the sore; "Though I must own," says he, "that I was never concerned in a cancerous case, in which the cure of the sore was completed."*

Has other virtues than a narcotic power.

Effects of other narcotics.

Of the other narcotics, chiefly of the solanaceous order, that have been employed, it is hardly worth while to speak particularly. The same uncertainty has accompanied their use: and some of them, as aconite and dulcamara, have been rather supposed to effect whatever temporary benefit has flowed from their employment by the general disturbance they produce in the system, whereby a transient stop is put to every other anomalous action, than by their sedative power.

Metallic oxydes: mercury, iron, arsenic.

Of the metallic oxydes that have been brought into use, the only ones it is necessary to notice are those of mercury, iron, and arsenic. The first has been uniformly found mischievous when carried to the extent of salivation. Loss asserts that by this mean he has cured a cancer of the nose and face;† but this was probably a spurious disease of zaruthan, as it has been called by some writers. It has more generally been employed as a gentle stimulant or alterant. Many practitioners have preferred the corrosive sublimate in small doses: but the submuriate is a far better preparation. And even this is given with more advantage in the form of Plummer's, or the compound calomel pill, than alone, a form that conveniently unites a mild stimulant with a mild relaxant. To this, if the pain be acute, should be added a small quantity of opium; at the same time carefully guarding the bowels against constipation by any convenient aperient, if the pill itself should not prove sufficient.

Zaruthan, what.

Mercury most serviceable as a gentle stimulant.

Plummer's pill: with opium.

* Mat. Med. loco citat.

† Observ. Med. B. IV. Lond. 1672.

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Iron has been tried in almost every state of combination, and there is reason to believe that in some of these it has proved beneficial. The ferrum ammoniatum appears to have been the most successful, and is still the most popular. Under the name of flores martiales it was introduced for this purpose before the public as far back as the middle of last century, by Francis Xavier de Mars, obtained, however, by a very uncouth and operose process. Dr. Denman was particularly attached to this metal in whatever form administered, and broadly affirms that, after having employed almost all the medicines recommended for this disease in every different stage, he has never found any of them possess the pretensions of iron; and that the rest may be generally regarded as totally unavailing.* Its greatly stimulant power rather recommends it to us on the present occasion than proves an objection; for it is the kind of stimulus we stand in need of to excite a new local action. It is said to produce a very speedy mitigation of pain, an improved discharge, and a less fetid smell: and, even in hopeless cases, to render the disease less malignant and distressing: unfortunately, however, its effects, like those of conium, have rarely been found permanent; and it has closed its career as a palliative rather than as an antidote.

Iron: in some forms serviceable.

Ferrum ammoniacale.

Preferred to all other medicines by Denman.

Effects produced by its use.

But of all the medicines of this class arsenic has acquired the highest and most extensive reputation. This is a strictly oriental remedy, employed, as we shall have occasion more fully to observe when treating of elephantiasis, for every impurity of the blood. Who first ventured upon it in Europe for the disease before us, is not very satisfactorily known. It was common in the time of Hildanus, who ascribes its introduction into practice by the monk Theodoric, who flourished about the beginning of the eleventh century.† It has formed the basis of almost all the secret remedies for cancer which have at any

Arsenic, high and extensive reputation. An oriental remedy.

Employed in Europe by Theodoric about the year 1000.

* Observations on the cure of Cancer, p. 77.

† Cent. VI. Obs. 81.

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time been current, whether external or internal, from that of Fuschius, in the fourteenth century, who united it with soot and serpentary, to that of Richard Guy who wrote upon the disease* in the middle of the last century, and whose boasted arcanum was found to be a composition of arsenic, sulphur, hogsfennel (peucedanum *officinale*) and arows's foot (ranunculus *sylvestris*.)†

Basis of all nostrums is that of Fusch, and Guy.

Real effects variously described.

Of the real effects of arsenic, as of several of the preceding medicines, we labour under great obscurity from the discrepant reports which have been communicated. Le Febure with a host of practitioners antecedent to, and contemporary with himself, employed it both externally and internally, and regarded it as a specific.‡ Smalz thinks it serviceable.§ Schneider‖ and Justamond declare it to be useless, though the latter employed it locally as an escharotic. Hildanus¶ and Delius** assert it to be injurious; and Schenck†† and Meibom‡‡ give examples of fatal effects from its employment.

Fatal effects, indeed, it is easy to produce, provided a sufficient degree of caution be not employed in experimenting upon it. And, in truth, it is not till lately that any very convenient form has been devised for trying its virtues without a risk of mischief; but the arsenical solution of the London College, for which we are indebted to Dr. Fowler, has given us a preparation of this kind. Yet even with this advantage we cannot boast of any certain success in the use of arsenic. It acts very differently on different constitutions, though generally

Acts differently on different constitutions: but mostly does service:

* Essays on Scirrhous Tumours and Cancers. 1759.

† Richter, Chir. Bibl. Band. v. p. 132.

‡ Remede eprouvé pour guerir radicalement le Cancere occulte, et manifeste ou ulceré. 8vo. Paris.

§ Seltene chirurgische und medicinische Vorfälle. Leips. 1784. 8vo.

‖ Chir. Geschichte, Theil. v.

¶ Account of the methods pursued in the treatment of Cancerous and Schirrous Disorders. Lond. 1780.

** Dissert. Observat. et Cognit. Nonnulla Chirurg. Fasc. VI.

†† Observ. Lib. II. N. 304.

‡‡ Blumenbach. Bibl. Band. VIII. p. 724.

speaking it proves beneficial; and in some cases may produce a radical cure. But more commonly, like the preparations of hemlock and iron, it unfortunately loses its effect as soon as the habit has become accustomed to its influence, and the cancerous taint, or cancerous action resumes its victorious career. And perhaps the only power that is capable of neutralizing cancer or keeping it permanently in subjection is the existence of a predominant diathesis of some other kind. How far the remark may have been made antecedently I know not, but from a pretty close attention to the subject within my own sphere of observation, I have been led to conclude that cancer does not often make its attack upon those who are constitutionally subject to gout, and seems to be restrained by its influence.

GEN. VI. SPEC. I. Carcinus vulgaris. Common cancer. Treatment. yet apt to lose its good effects by habit. How far the introduction of a different diathesis may be of permanent use. Seems to be restrained by that of gout.

The list of external applications is still more numerous than that of internal. We have already glanced at the local treatment before ulceration has taken place. After this period, sedative applications do not succeed, and moderate stimulants alone seem best to afford relief. In fact, the inflammation has now acquired much of the character of a malignant erythema, and requires warmer applications than phlegmonic sores. Yet a cure is rarely to be effected except by a caustic or the knife. When the poison was supposed to be of an acid character a solution of the alkalies was employed to correct it, and the ammonia produced from burnt toads was at one time in very high repute. It was afterwards conceived to be of an alkaline nature; and various acids, and particularly the carbonic acid gass, were regarded as the best antagonists. Who first employed it for the present purpose is not known; but it stands recommended as early as 1776, in an article of Magellan, inserted in Rosier's Journal; and an easy and convenient mode of application has lately been contrived by Dr. Ewart of Bath. Dr. Crawford, however, for the same purpose, preferred a lotion of muriatic acid diluted with three or four times its weight of water. Carminati and Senebier applied the gastric juice

Local treatment after ulceration. Alkalies. Ammonia. Hence burnt toads once in repute. Acids. Carbonic acid gass. Muriatic acid. Gastric juice.

GEN. VI. SPEC. I. Carcinus vulgaris. Common cancer. Treatment.

of animals; but poultices of carrots or charcoal have of late years been in more general reputation.

All these have a considerable influence in correcting the oppressive fetor, and keeping the sore clean; but whether they go beyond this has been doubted. Yet even this is of great importance, since such an effect must necessarily give some check to the spread of the ulceration, afford solace to the patient, and probably improve the nature of the discharge itself. And hence many writers have been sanguine enough to expect an entire cure from such processes; and others have given accounts of such cures *nearly* accomplished; but which seem seldom, if ever, to have been rendered complete.

Charcoal.

The general effect of these.

Narcotic fomentations.

Fomentations of hemlock and various other narcotics have been also had recourse to, and sometimes tepid baths of the same, in which the patient has been ordered to sit for twenty minutes at a time; and temporary benefit has sometimes followed the use of these means; but they have often been tried with as little avail as the suckling of toads, which was at one time a fashionable remedy, and esteemed of great importance, the animals being feigned to expire in agonies as the poison of the ulcer was drawn out, and its surface assumed a better aspect. Bouffey, who was a witness to their use, tells us, and probably with some truth, that they did more harm than good,* and dealt out more poison than they took away. The era of this invention is unknown, but it was still in use about half a century ago in our own country, if we may judge from one of the private letters of Junius to Woodfall, who, alluding to the princess dowager of Wales, at that time afflicted with a cancer that destroyed her in January 1772, asserts that "she suckles toads from morning till night."†

Suckling of toads.

Arsenic powder a good detergent.

One of the best detergents appears to be arsenic finely levigated and sufficiently reduced in strength by an union

* Journ. de Med. Tom. LXII.

† G. Woodfall's Edition. Vol. I. p. 241.

with calamine or some other ingredient. It is also one of the best caustics, in a simple or more concentrated state, and was freely employed as such by Mr. Justamond. Guy's powder, which we have already noticed, is used externally for the same purpose.

GEN. VI. SPEC. I. Carcinus vulgaris. Common cancer. Treatment.

We have already observed that sheets of lead, among other preparations of this metal, were applied to the cancer about forty or fifty years ago, and bound over it with some degree of pressure. But a pressure of a much severer kind, together with the use of the same metallic sheeting, has of late years been employed by Mr. Young and apparently in many cases with a very salutary effect, so far as relates to checking the spread of the disease, a diminution of the tumour, and an improvement of the nature of the discharge. The plan, however, has failed in many instances; and how far it may have produced in any instance a decided cure, the author cannot positively affirm. The sheet-lead is applied with a considerable tenseness of compression by means of plaster-straps, tin-plates, folded-linen, and appropriate rollers. The force employed, however, is less severe at first, but progressively increased; and the change of action is with much more reason ascribed to the sedative effect of the mechanical pressure than to that of the lead.

Sheet-lead in union with rigid compression.

After all, when the cancerous character of the tumour is once decidedly established there is little dependence to be placed upon any plan but that of extirpation by a caustic or the knife. The actual cautery as employed by M. Maunoir, of which we shall have to speak more at large when discussing the genus ULCUS, may perhaps be most advantageously made use of in small cancers of the face, but the knife is the preferable instrument where the organ is large and extensively affected. Mr. Bell advises an early performance of the operation; Mr. Pearson, that we should wait till the extent of the disease has fully unfolded itself, so that no morbid part may be left behind. Yet some parts may be doubtful even at

Little dependence on any measure but extirpation by the knife or cautery.

Operation at which stage best performed.

GEN. VI. SPEC. I. Carcinus vulgaris. Common cancer. Treatment.

last, and, wherever there is the least suspicion of this, they should unquestionably be removed along with the more decided portion of the morbid structure.

But even this measure inapplicable to cancer in internal organs.

Even this remedy, however, can only apply to exterior organs, or to organs that can be brought down to the surface, for the uterus has been occasionally extirpated, in a few instances with success, but far more frequently without any benefit, perhaps from the operation having been postponed till too late. In all other instances, the practice is melancholy from the first. The die is cast almost, if not altogether, irrecoverably: and all we can hope to accomplish is to postpone the fatal result, to mitigate the sufferings of the day, and soften the harsh passage to the tomb.

GENUS VII.

LUES.

Venereal Disease.

ULCERS ON THE GENITALS, INGUINAL BUBOES, OR BOTH, AFTER IMPURE COITION; SUCCEEDED BY ULCERS IN THE THROAT, COPPER-COLOURED SPOTS ON THE SKIN, BONE-PAINS AND NODES.

GEN. VII. Derivation of the generic term.

THE term LUES is derived from the Greek λυω, "solvo, dissolvo"—"to macerate, dissolve or corrupt;" and, agreeably to the common rule of expressing the power of the Greek υ by a Roman *y*, should be written LYES, as in the case of *Lyssa* and *Paralysis*, both of which are derived from the same root; but lues has been employed so long and so generally that it would be little less than affectation to attempt a change: and in allucinatio, or hallucinatio, from the Greek αλυω or αλυσις, we are supported by a similar example of deviation from the common rule.

Acrimonious fluids secreted by the genitals capable of producing various diseases, known from an early age: and hence alluded to by Celsus.

It appears to have been known to the world from an early age, as I have remarked in the running comment to the volume of Nosology, that acrimonious and poisonous materials are, at times, secreted by the genitals, capable of exciting local, and perhaps constitutional affections in those who expose themselves to such poisons by incontinent sexual intercourse. Celsus enumerates various diseases of the sexual organs, most of which are only referable to this source of impure contact; but the hideous and alarming malady which was first noticed as proceed-

GEN. VII. Lues. Venereal disease.

ing from the same source towards the close of the fifteenth century, and which has since been called almost exclusively VENEREAL DISEASE has suppressed, till of late, all attention to these minor evils, in the fearful contemplation of so new and monstrous a pestilence; to various modifications of which most of the anterior and slighter diseases of the same organs seem to have been loosely and generally referred; as though there were but one specific poison issuing from this fountain, and consequently but one specific malady. On which account, much confusion has arisen in the history and description of the disease; and syphilis, its most striking species, though commonly admitted, as we shall see presently, to be comparatively of recent origin, is by Plenck,* Richter,† Stoll,‡ and other writers of considerable eminence, regarded as of far higher antiquity; asserted by Lefevre de Villebrune,§ to have existed eight centuries before the expedition of Columbus to America, and by De Blaguy‖ to have been extant in the Mosaic age.

But all the rest merged in syphilis since its first appearance in the fifteenth century.

Hence numerous mistakes concerning the history and description of syphilis itself.

Hunter's correct view of the subject: confirmed by Abernethy's observations.

The keen and comprehensive mind of Mr. John Hunter first called the attention of practitioners to the idea of different poisons and different maladies; and the subject has since been pursued by Mr. Abernethy with a force of argument and illustrated by a range of examples that seem to have put the question at rest. Mr. Abernethy has sufficiently established that, independently of the specific disease now generally recognized by the name of syphilis, there are numerous varieties of some other disease, perhaps other specific diseases, which originate from a distinct, possibly from several distinct, poisons secreted in the same region from peculiarity of constitution, or causes hitherto undiscovered; and which are accompanied with primary and secondary symptoms that

* Beobachtungen, &c. II.

† Chir. Bibl. Band. I. Sect. ii. p. 163.

‡ Prælect. p. 94.

§ Retz. Annales, IV.

‖ L'Art de guerir les Maladies Veneriennes, &c.

GEN. VII. Lues. Venereal disease.

often vary in their mode of origin, succession, and termination from those of genuine syphilis, though in many instances they make a striking approach to it; and to which, therefore, Mr. Abernethy has given the name of pseudo-syphilitic diseases.

Whether these diseases, so like syphilis, are distinct species, or modifications of a common species, not known decisively. Most convenient at present to regard them in the latter view.

The approach, indeed, is often so close as to render it difficult, and occasionally perhaps impossible, to decide between them; and hence whether these really constitute distinct species, issuing from distinct sorts of infection, or are mere varieties or modifications of one common species produced by one common morbid secretion, has not yet been sufficiently determined. In this ignorance upon the subject, it is better, for the present, to regard them in the latter, as being the more simple view; and with this preliminary explanation the expediency of allotting the two following distinct species to the genus lues will, I think, be obvious to every one.

1. LUES SYPHILIS. POX.
2. —— SYPHILODES. BASTARD POX.

SPECIES I.

LUES SYPHILIS.

Pox.

ULCERS ON THE GENITALS CIRCULAR, UNGRANULATING, THICKENED AT THE EDGE; THOSE OF THE THROAT DEEP AND RAGGED; SYMPTOMS UNIFORM IN THEIR PROGRESS: SPEEDILY AND UNIFORMLY YIELDING TO A COURSE OF MERCURY WHERE IT AGREES WITH THE CONSTITUTION: LESS CERTAINLY AND WITH MORE DIFFICULTY YIELDING WITHOUT IT.

GEN. VII. SPEC. I. THE vulgar term for the ulcers is *Chancres*, and the vulgar name for the disease is *Pox*, formerly *Great-Pox** as contradistinguished from VARIOLA or SMALL-POX on account of the larger size of its blotches. It was also very generally called French Pox, as being supposed to be a gift to Europe from the French nation.

Derivation of the specific term traced differently.

There is some uncertainty concerning the origin of the specific term SYPHILIS; which Swediaur ascribes to Fernelius, but which assuredly existed long before his day; and was probably invented by Fracastorio about the close of the fifteenth century, from the Greek συ and φιλεω, importing "mutual love;" for such is the title by which he has designated his celebrated and very elegant poem upon this very inelegant subject.

* De Henry, La Methode curatoire de la Maladie Vénérienne, vulgairement appellée la GROSSE VEROLE, &c. Paris, 8vo. 1552.

GEN. VII. SPEC. I. Lues Syphilis. Pox.

Origin of the disease disputed.

Whether imported from America by the crews of Columbus. Question examined.

Appeared in Europe too early for this.

There is an equal uncertainty as to the quarter in which the disease originated. It is usually ascribed to the American continent, and believed to have been imported into Europe by the crews of Columbus on his first or second return home in 1493 and 1496; a belief, however, which seems to be altogether without foundation, for at the period even of the first return of this celebrated circumnavigator in March 1493, it seems to have preceded this return by some weeks; since on his reaching Seville in the ensuing month of April, in order to join the Spanish army, it had already arisen and was spread over Auvergne, Lombardy, and various other parts of Italy; as, in the course of the summer months, it was observed in Saxony, Brandenburg, Brunswick, Mecklenburg, and especially Strasburg, as all the German writers concur in admitting;* and even at Cracow, in Poland, according to Strykowsky's Chronicle of Lithuania; while Fracastorio, who was an eye-witness of the entire progress of the disease, and from his high medical reputation, and residence almost on the spot of its first appearance, more largely engaged in the cure of it than any physician of his day, asserts that it was even ravaging a considerable part of Asia and Africa as well as of Europe: "Europam" says he, "ferè omnem, Asiæ verò, atque Aphricæ, partem non parvam occupavit."† The writer proceeds to notice the dispute that was then hotly engaged in as well concerning the nature as the origin of the disease, and again expresses his disbelief in its having been imported from America by the crews of Columbus. On this account, he feels himself at liberty to give it a very early origin in his poem upon the subject, and describes his fictitious hero Syphilus as having brought down the disease upon himself and the world at large, as a curse for

* See especially Meiner, Sitten des mittel alten.—Stumf, Schweizer Chronick, Lib. XIII.—Stettler, Schweitzer Chronick, Lib. VII.—Sprengel, Geschicte der Arneykunde, Theil. II.

† De Contagiosis Morbis.

GEN. VII SPEC. I. Lues Syphilis. Pox. having insulted Apollo, while tending the flocks of king Alcithous.

> Protinus illuvies terris ignota profanis
> Exoritur: primus, regi qui, sanguine fuso,
> Instituit divina, sacrasque in montibus aras,
> SYPHILUS; ostendit turpes per corpus achores,
> Insomnes primus noctes, convulsaque membra
> Sensit, et a primo traxit cognomina morbus:
> SYPHILIDEMQUE ab eo labem dixere coloni.

One of the earliest German writers who ascribed the disease to the return of Columbus is Leonard Schmauss, a physician of Strasburg, whose works were published in 1518; but neither his history nor his arguments are in any degree satisfactory: while his countryman Matern Berlen, a clergyman of Ruffach, and an eye-witness of the disease on its first appearance, assigns it a very different origin; and in his history of the Italian expedition of Charles VIII. declares it to have been a punishment inflicted by the Almighty on this monarch and his subjects, in consequence of his having carried off the Duchess Anne of Bretagne from the Emperor Maximilian, to whom she had been betrothed.

Among the Spanish writers, there are two chiefly who ascribe the origin of syphilis to an American source: while others, by their silence upon the subject when detailing the particulars of the return of Columbus, give sufficient evidence that they disbelieved the report. Of the two who thus contributed to spread it, one of them, Gonçalvo Hernandez de Oviedo, affirms that it was conveyed into Italy by Cordova's fleet, which, however, did not arrive in Italy (Messina) till May 24, 1495, and consequently not till two years after the disease had existed there. The other is Sapelveda, who, in a history of America, written in a good Latin style, towards the middle of the sixteenth century, roundly asserts that "ex *Barbaricarum* mulierum consuetudine Hispani morbum contraxerunt." But as this writer does not, like his contemporary Fracastorio, enter into the particulars

Gonçalvo Hernandez de Oviedo.

Sapelveda.

of the controversy, his assertion can go no farther than to the weight of his own individual opinion in a controverted case.

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Amongst those who have been most full in their accounts of the voyages of Columbus and the discovery of America, we may certainly reckon Antonio de Herrera. He fixes the return of Columbus at the period above specified; and is very particular in detailing the order sent to Lisbon to him, on the moment of his arrival, to follow the Spanish Court to Barcelona, to which city it was then removed; the highly honourable reception the circumnavigator received; the preparations which were immediately made for his second voyage: the speed with which these preparations were accomplished; and the instructions given to him on the occasion. Yet not a hint is added that his crews were unhealthy, that the new recruits had any dread of the plague, to which, had he brought it home, they must have known they were about to be exposed, nor a single instruction to be provident of their health in this respect. He took leave of the royal pair with every mark of distinction, the whole court accompanying him to his house, as well at the time as when he quitted Barcelona. "*Despidòse,*" says Herrera, "*de los Reyes, y aquel dia le acompano toda la Corte de palacio à su casa, y tambien quando salio de Barcelona.*"*

Antonio de Herrera.

Linnéus stands alone in arranging syphilis as an exanthem, along with small-pox and measles. He thought himself justified from the fever which occasionally accompanies the copper-coloured spots on the skin, in an advanced stage of its secondary symptoms: or perhaps from the fever which, on the first appearance of the disease unquestionably accompanied it, and uniformly preceded the eruptions. For it is an extraordinary fact, to which all the contemporaneous writers bear witness, that syphilis, when it first broke forth upon the world, and,

Syphilis arranged by Linnéus as an exanthem.

His ground for so doing.

* Hist. Gen. de las Indias Occidentales, Decad. I. L. II. C. V.

GEN. VII. SPEC. I. Lues Syphilis. Pox.

indeed, as it is described in Fracastorio's poem, was not only called the plague, but was, in truth, a specific fever attended with most violent putrid symptoms, together with carbuncles, buboes, and other glandular abscesses, which discharged a malignant sanies, often fatal, and even, when recovered from, leaving the most melancholy marks of its ravages.

Syphilis at first regarded as a species of plague and marked at once by malignant and fatal symptoms.

And hence, in many places, the infected were as much exiled from the community by a line of circumvallation drawn around them, as in the case of plague. In Scotland, indeed, they were strictly prohibited all medical assistance, and inhumanly left to the effects of their own licentiousness. For Mr. Arnot gives the copy of an order from the privy council of Edinburgh, which equally banished to the island of Inck-Keith those who were affected with the disease, and those who undertook to cure it.*

Has grown gradually milder.

By degrees, however, the disorder appears to have assumed a chronic form, and at length so far changed its nature as to make its attack without fever, and to remain local except from absorption. It seems still, indeed, to be continuing its course of melioration notwithstanding the assertion of Dr. Swediaur,† that it has not assumed a more mitigated character at present than in former times; for very severe cases are now much rarer, not only in private practice but even in public hospitals, than they were thirty or forty years ago.

Melioration accounted for.

It is possible that this change may have been produced by two causes; firstly, by the virus wearing out its own strength and becoming milder as it descends to different individuals and generations, and has to cope with the force of sound constitutions, and, perhaps also, with a perpetual instinctive power or vis medicatrix naturæ, constantly labouring to subdue it: of which we shall hereafter have occasion to offer other examples than

* History of Edinburgh, by Hugo Arnot, Esq. 4to. 1788.

† Beobachtungen, &c. p. 172.

the present. And, secondly, it is also highly probable that the frequent and, indeed, universal use of mercury for its extermination has succeeded, as a specific, in softening its violence, in the same manner as we know the virus of cow-pox succeeds in giving a milder character to small-pox even where it does not altogether answer as a prophylactic.

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Syphilis shows itself under two distinct sets of symptoms, local and constitutional, the latter of which is commonly, but not always, a sequel of the former.

Syphilis distinguished by symptoms local and constitutional.

In which way soever it is produced it is usually by means of impure coition; though we shall have occasion to show presently that syphilitic matter coming in contact with any part of the surface of the body, where it is capable of burrowing and meeting with a little mucous sweat, or, perhaps, any other natural secretion, is capable of assimilating it to its own nature, and hence of introducing the disease into the system by absorption; and consequently without any breach of surface. And hence, as other parts than the sexual organs may be a medium of communication, no local symptoms may in some instances ensue, and the constitutional signs be the first to manifest themselves.

Usually produced by impure coition: sometimes by other means.

The earliest ordinary mark, however, that infection has taken place, is the appearance of one or more minute pimples of a peculiar kind, which are called chancres; having a hard inflamed base, of a pale red hue, and an irritable apex, at which it opens with a small eye-let, becomes ulcerated, and discharges a small portion of limpid virus, that produces fresh chancres wherever it spreads. In the common mode of infection the chancre shows itself on the prepuce, glans, and orifice of the urethra in men, and about the labia, nymphæ, clitoris, and lowermost part of the vagina in women. This mark sometimes appears as early as the third or fourth day after coition, more generally, however, a few days later; and in some instances, where the cutaneous absorbents possess little irritability, not till a lapse of several weeks.

First stage, consisting of primary local symptoms.

Chancres what.

GEN. VII. SPEC. I. Lues Syphilis. Pox. First stage.

The chancre occasionally continues blind, and degenerates into a hard and irritable wart, with which the genitals are frequently studded, sometimes as low down as the anus.

Bubo, its description and progress.

Another local symptom is the formation of a bubo in one or both groins, evidently produced by an absorption of the virus first deposited, or, as is more commonly the case, multiplied in the ulcerated chancre, communicated to the lymphatics, and hence to the inguinal glands, which in consequence become inflamed and tumefied. The tumour, when first perceived, is small, but hard, fixed and diffused, with a somewhat obtuse pain. It enlarges gradually and becomes more acutely painful, so as to render walking troublesome; and if not opened by the lancet, generally bursts by the time it has reached the size of a pullet's egg, and discharges a copious quantity of pus from a single hollow. In a few instances, the suppurative inflammation does not follow, and the tumour as it augments acquires a scirrhous induration.

Occasional inflammation of spermatic chord.

Sometimes, also, the inflammation extends by sympathy to the spermatic chord, which is inflamed and rigid through a great part of its course, while the testes themselves are tender and considerably swoln.

Sometimes of urethra; with a purulent discharge resembling that of gonorrhœa: and formerly mistaken for it,

And occasionally, from sympathy also, or an entrance of a part of the received virus into the urethra, its mucous membrane becomes inflamed and pours forth a considerable secretion of pus or purulent mucus, resembling that of blennorrhœa, or gonorrhœa as it is commonly called, or the purulent discharge from the eyes in purulent ophthalmy.

whence the two diseases regarded as one and the same.

This was at one time mistaken for a genuine gonorrhœa, and the two diseases were very generally regarded as only different modifications of one and the same species. And some practitioners continue to be of the same opinion still, notwithstanding all the facts that have been adduced in proof of their being distinct maladies produced by distinct kinds of contagion. The local symptoms of syphilis, chancres and buboes, are perpetually occurring without gonorrhœa, and gonorrhœa without

Proofs of distinction.

chancres and buboes. Insomuch, that there are not wanting practitioners who affirm that they never occur together unless the two venoms are received simultaneously. And there is no doubt that this assertion is true in regard to a genuine gonorrhœa; but, from the cause already stated, a large flow of pus or purulent matter, and a general irritation and enlargement of the body of the penis, in appearance strongly resembling the symptoms of a genuine gonorrhœa, sometimes coincide with the primary signs of a syphilis, of which a very marked case occurred to the author not long ago, which he showed to an eminent surgeon of this metropolis who had antecedently been incredulous upon this point. And hence a like admission of Professor Frank who, however, does not speak very decidedly upon the subject; and has strangely placed syphilis not only with gonorrhœa, but with leucorrhœa, mucous piles, hernia humoralis, and a variety of other diseases, under one and the same indistinct genus to which he has given the name of medorrhœ.* But the clearest and most incontrovertible proof of distinction between the two complaints immediately before us is, that in no instance whatever has a simple gonorrhœa, unconnected with bubo or chancre, produced those secondary or constitutional symptoms to which the proper local signs of syphilis are sure to lead, if not corrected in their progress.

GEN. VII. SPEC. I. Lues Syphilis. Pox. First stage.

These symptoms are a peculiar affection of the mucous glands of the fauces and mouth, which eliminate syphilitic poison along with their proper secretion; whence the tonsils, uvula, palate and tongue, progressively become sore and ulcerated, the voice is rendered hoarse, and the swallowing difficult. The ulcers about the fauces are of a distinctive character, being foul and rugged, with an excavated centre covered with a brown or whitish slough, and surrounded with a hard, red, elevated and erythematous outline.

Second stage: consisting of secondary or constitutional symptoms.

Ulcerated throat and mouth.

* De Cur. Hom. Morb. Epit. Tom. v. p. 149. Mannh. 8vo. 1792.

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The mucous membrane of the conjunctive tunic of the eyes next suffers in the same way, and displays an inflamed surface with ulcerations on the eye-lids and angles of the eyes. The skin is in various parts covered over with copper-coloured spots, which at first desquammate in scurfs, afterwards in scales, and still later in scabs; each of which leaves a foul ulcer that gradually grows deeper, and discharges an offensive and acrimonious fluid.

Second stage. Inflamed eyes.

Copper-coloured spots on the skin.

As the disease advances, irregular pains shoot through the limbs, and are felt so severely at night as to prevent sleep. By degrees they strike into the bones, which become diseased, and in many places swell into nodes, which at length grow carious: while the ulcerations about the fauces spread at the same time, or even before this, to the adjacent bones of the palate and nostrils which are gradually eroded and carried away; so that the speech is rendered nasal and imperfect, and the nostrils are flattened to the level of the cheeks.

Pains in the limbs and bones.

Nodes.

Caries of various bones especially of the nose and palate.

Countenance sallow. Loss of hair and appetite. Hectic fever.

Finally, the countenance grows sallow, the hair falls off, the appetite is lost, the strength decays, and a low hectic preys upon the system, and at length destroys it.

Disease remains in a local form to an uncertain period: as well as dormant in the system.

It is not easy to say how long the matter of syphilis, when once communicated, may remain limited to the local symptoms of chancres or buboes, or continue inert in the system where no local symptoms have taken place; or what period must intervene before a patient may be pronounced safe after having exposed himself to contamination. We have already seen that the primary or local signs generally manifest themselves within four or five days; and, where the constitution has become infected without them, we have reason to expect the appearance of the secondary symptoms soon after three weeks, or from this time to six months: and, if this latter interval have passed without the slightest manifestation of mischief locally or generally, we have little reason to fear for the issue. It has been said, however, that the poison has lurked unperceived for several years:

Local symptoms often appear about four or five days after infection.

Constitutional from a period of three weeks to six months.

Has been said to lurk for several years.

GEN. VII. SPEC. I. Lues Syphilis. Pox.

yet it is rarely that such an assertion is made except for the purpose of excusing some fresh infection. I should, indeed, have been disposed to think it had never been made otherwise, but that Dr. Hahnemann has referred to an instance or two to the contrary in which he places full confidence;* and particularly that the late Mr. Hey of Leeds, whose authority is indisputable, has offered it as his opinion, formed from a variety of cases that had occurred to him during an extensive practice of nearly threescore years, that a man may communicate the disease after all its symptoms have been removed, and he is judged to be in perfect health; and that a mother who has been once affected may convey it, notwithstanding an apparent cure, to two, three, or four children in succession, each of whom he supposes will have it in a milder form than the preceding one; as though it were gradually ceasing in the constitution, though it still continues to show some degree of activity.†

Second stage, but very rarely if ever. Yet the assertion supported by Hahnemann and Hey.

It is obvious, however, that in syphilis, as in various other diseases produced by the absorption of a specific virus, different constitutions are differently affected, and that some are far more susceptible of the morbid action than others. In many instances, it is received by simple contact alone and through an unbroken skin. It is generally, perhaps, thus received in the ordinary course of connexion; but still more evidently thus in other cases, and by other organs; for it has been very frequently caught by sucking the nipple of an infected wet-nurse; by infected saliva communicated in kissing; by drinking out of a cup that has previously been used by a syphilitic patient;‡ and it is said to have been produced by

Hence some constitutions more susceptible of the virus than others.

Sometimes received by simple contact through an unbroken skin: by sucking an infected nipple.

* Hahnemann, Unterricht für Wundarzte über die Venerischen Krankheiten. 8vo. Leips. 1789.

† Facts illustrating the effects of the Venereal Disease. By William Hey, Esq. F.R.S. 1816.

‡ Reid, Diseases of the Army, &c.—Gruner, die Venerische Austehung durch gemeinschafftlische Trinkgeschirre. Waissenfels. 1787.

GEN. VII. SPEC. I. Lues Syphilis. Pox. Second stage.

receiving infected breath,* and lying in a bed which had been antecedently occupied by a person labouring under the disease :† in some of which cases, however, it seems necessary to suppose the existence of a cut or crack or some other breach of surface in the skin, and particularly about the lips, with which the syphilitic virus must have come into union. And it is hence easy to conceive how much more readily it may be communicated by the insertion of an exotic tooth,‡ by bleeding or scarification with an infected lancet,§ or by the attendance of an infected midwife,‖ who has sometimes given the complaint both to the mother and the child.

by infected breath: by the insertion of an exotic tooth: an infected lancet: or the attendance of an infected midwife.

A very melancholy instance of infection is related by Dr. Barry of Cork, communicated by a woman who was in the habit of drawing the breasts of puerperal patients, and who, upon examination, was found to have chancres on the lips and roof of her mouth; probably caught from some impure person in the course of her vocation. From the numerous engagements of this woman, the disease had spread very widely; and the rapidity of its progress was as striking as the manner of its communication. "The nipple," says Dr. Barry, "first became lightly inflamed, which soon produced an excoriation, with a discharge of a thin liquor: from whence red spreading pustules were dispersed round it and gradually spread over the breast, and, where the poison remained uncorrected, produced ulcers. The pudenda soon after became inflamed, with a violent itching, which terminated in chancres that were attended with only a small discharge; and, in a short time after, pustules were spread over the whole body. It finished this course, with all these symptoms, in the space of three months. The disorder made a quick and rapid progress in those who first received it,

Melancholy example.

* Reid, Diseases of the Army, &c.

† Horstius. Opp. II. p. 315.

‡ Watson, Medical Transactions, Vol. III. p. 325.

§ Girtanner, die Venerischen Krankheiten, &c. p. 165.

‖ Act. Nat. Cur. Vol. VII. Obs. 75. Vol. IX. Obs. 94.

they not being apt to suspect an infection of this nature in their circumstances. The husbands of several had chancres, which quickly communicated the poison and produced ulcers in the mouth, and red spreading pustules on the body. But such of them escaped who had timely notice of the nature of the disease before the pudenda were affected. Some infants received it from their mothers, and to the greatest part of them it was fatal."*

GEN. VII. SPEC. I. Lues Syphilis. Pox. Second stage.

Where a wet-nurse and the infant she suckles are both affected, and there is a doubt which has communicated it to the other, collateral circumstances will assist us much; but where the one, as is usually the case, has constitutional symptoms, and the other only local, the former must have had the disease longest, and consequently have been the source of contamination.

Such, however, is the unsusceptibility of some idiosyncrasies, that the matter of syphilis like that of small-pox, seems to have no effect upon them, and they are proof against its activity. I once knew a young physician who finding himself to be thus naturally protected, fearlessly, and for the sake of experiment, associated himself with females in the rankest state of the disease, and escaped in every instance. In like manner Schenck† gives us a case of an infant render syphilitic through a diseased father, while the mother remained unaffected; and Mauriceau and other writers, give cases of infants which have been fortunate enough to avoid infection though born of syphilitic mothers:‡ while Pallas asserts that the Ostiacks have a general immunity from the disease under whatever form it offers itself.§

Some constitutions insusceptive of the disease.

Illustrated.

The Ostiacks generally insusceptive.

And, after all, the symptoms that characterize the disease, as well in its first and its second stage, are at times so nearly approximated by those which are occasionally

Difficulty at times of distinguishing between syphilis and syphiloid lues.

* Edin. Med. Essays, Vol. III. Art. XXI. p. 297.

† Observ. Lib. VI. N. 21.

‡ Mauriceau, II. p. 100. 377.—Eph. Nat. Cur. Cent. III. IV. Obs. 18.

§ Reisen, III. p. 50.

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traced in the second species of this genus, syphiloid lues or spurious syphilis, that it is often extremely difficult to distinguish them, and we are obliged to enter minutely into the history of the case in order to assist our decision.

Hunter's pathognomics;

It was regarded by Mr. Hunter as a pathognomic character of syphilis, firstly, that it never ceases spontaneously; secondly, that it is uniform and progressive in its symptoms; and thirdly, that it is only to be cured by mercury. And such continue to be the doctrines of many of his warmest advocates to the present day.

However applicable formerly.

How far these characters may have applied to it on its first appearance in Europe, under the influence of European excitements, and when the general constitution of European nations was fresh to its virus; or how far such characters may have descended to the middle of the last century, not long after which Mr. Hunter was so deeply engaged in drawing up those masterly views of this disease which he at length gave to the public in 1786, it may be difficult to determine. But to maintain any one of these doctrines without much modification, and especially as criteria of genuine syphilis in the present day, after the wide field of experiments which have been opened to us both at home and abroad, would be the height of incredulity. For we have hundreds and, perhaps, thousands of proofs, that instead of "never ceasing spontaneously," it has occasionally disappeared without any other care than that of cleanliness and a reducent diet; that, instead of being uniform and progressive in its symptoms, it has occasionally retrograded or disguised itself under a variety of peculiarities, according to the influence of habit, climate or idiosyncrasy; and that instead of being only to be cured by mercury, various other modes of treatment have been quite as successful; while, in numerous cases mercury has added to the virulence of the disorder, and introduced many of those very symptoms which have usually been regarded as indicative of its secondary stage. Insomuch that it has been almost as seriously made a

will not apply now without much allowance and modification.

Exemplified.

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question in France whether there is any such disease as syphilis,* as it has been in our own country whether there ever was such a disease as plague: the former being as much resolved into local uncleanliness or constitutional irritation, as the latter has been into some modification of typhus with incidental influences.

Hence doubted in France whether syphilis have any real existence.

This, however, is to run from one extreme of opinion to another; and all we can fairly collect from such a collision of facts and opinions, is a confirmation of the conjecture I have already ventured to throw out, that syphilis, like many other diseases, is capable of being greatly modified by contingent or habitual concomitants, or that it has actually changed its character, and is in a progressive course of melioration.

This opinion extreme and unfairly deduced.

Admitted by Hunter that syphilis is sometimes intractable under mercury.

In truth it is well known that Mr. Hunter himself found at times the secondary symptoms of syphilis intractable to a mercurial course, and had the candour to acknowledge as much. Dr. Adams, indeed, with all his warmth of attachment to the Hunterian code of doctrines, has given an impressive case of this very kind, in which, in spite of the mercury, the disease carried its assault from the first to the second order of parts, by which is meant the bones. But then this anomaly is accounted for by their ingeniously telling us that if a constitutional disposition to the disease be formed the mercury cannot cope with it till such disposition comes into action; which seems, as Mr. Guthrie has justly observed, to mean nothing more in plain language, than that "the disease cannot be prevented in certain constitutions from running its own course, when it may at last be cured."

Hunterian pathognomics first questioned by the medical officers of the British army.

Of all the profession the medical officers of the British army seem to have been first impressed with the expediency of re-examining and revising the established doctrines upon the subject before us, from having observed that mercury is little used in Southern Europe, and es-

Grounds of their doubt.

* See the anonymous but ingenious Pamphlet, Sur la Non-existence de la Maladie Vénérienne. Paris, 8vo. 1811.

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pecially in Spain and Portugal, and that syphilis is suffered in a very considerable degree to take its natural course; or at most to be treated locally as ordinary sores, and constitutionally with only herbaceous diluents or diaphoretics; while the primary symptoms evidently vanish under this simple remedial course, and secondary symptoms are at times not more common than where mercury is had recourse to and solely depended upon. Mr. Rose, surgeon to the Coldstream regiment of Guards, was determined to put the question to a test, and upon such a scale as might lead to something of a decisive result. He forbore, in consequence, about the year 1815, to employ mercury for the cure of any case of syphilitic affection or suspected to be such, among the soldiers of his own regiment; and soon sufficiently perceived that though the cure did not advance so rapidly as under a judicious use of mercury, it nevertheless in every instance did advance; that it was not more severely followed by secondary symptoms or a syphilitic dysthesy than where mercury is trusted to as a specific, and that, of course, it was without the risk of those mischiefs to the general health which mercury is so well known to introduce where it disagrees with the constitution.

Rose's experiments in the Guards.

Communication of the same.

Having persevered in this mode of treatment, in his own opinion very successfully, for a period of nearly two years, he communicated its result to the public in the eighth volume of the Medico-Chirurgical Transactions,* with a long list of well diversified cases, and observations that cannot fail to make an impression on every one who reads them.

Repeated on a large scale by others in France: York Hospital:

The experimental course laid down by Mr. Rose was soon adopted by others, and, on various occasions carried into establishments which afforded ample space for a satisfactory examination. It was tried in other battalions of the Guards as well in France as at home; was introduced into the York Hospital at Chelsea, and various

* Observations on the Treatment of Syphilis, &c. Vol. VIII. p. 349. 1817.

other hospital establishments, as at Dover, Chatham, and Edinburgh. "From these hospitals," says Mr. Guthrie, "I have seen the reports of nearly four hundred cases which have been treated with the same result, as far as regards the cure of primary ulcers; each ulcer appears to have run a certain course, which, as to extent, was much the same as in one of the same appearance where mercury was supposed to be necessary; and at an indefinite period of time to have taken on a healing action; and, in the greater number of instances, skinned over rapidly, leaving a mark or depression showing a loss of substance. With us, where the ulcer had the characteristic appearance of chancre, dry lint alone was generally applied to it. Where these signs were less prominent, a variety of applications were used. But there were a great number of sores, both raised and excavated, on which no application made the least favourable impression for many weeks. They did, however, yield at last to simple means, after remaining for a considerable time nearly in the same state, several of them having become sores of a large size previous to or in the first days of their admission. If they were ulcers without any marked appearance, and did not amend in the first fortnight or three weeks, they generally remained for five or seven weeks longer: and the only difference in this respect, between them and the raised ulcer of the prepuce was, that this often remained for a longer period; and that ulcers, possessing the true characters of chancre, required in general a still longer period for their cure; that is from six or eight to ten, twenty, and in one case to twenty-six weeks, healing up and ulcerating again on a hardened base. Those that required the greatest length of time had nothing particular in their appearance that could lead us to distinguish them from others of the same kind that were healed in a shorter period. Neither were any of these ulcers followed by a greater number of buboes, nor did they suppurate more frequently than in the same number of cases treated by mercury. On the contrary the ulcers were not so fre-

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Dover Hospital:

Chatham:

Edinburgh: with like results.

Guthrie's remarks.

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quently, on the average, followed by them; neither did they so often suppurate. But this may also be attributed to the antiphlogistic means employed both generally and locally for their relief."* And to this it may be added that M. Cullurier, the first surgeon in the Venereal Hospital at Paris, has been for years in the habit of demonstrating to his pupils the possibility of curing every kind of ulcer that falls under his notice without mercury. He usually, indeed, has recourse to this medicine *afterwards*, but for the mere purpose of guarding against secondary symptoms.

Practice of Cullurier at Paris.

It is very candidly admitted, however, by Mr. Guthrie, that although these experiments give the strongest proof of the possibility of curing venereal ulcers without mercury, yet that a much longer period of time is required for the cure. "I have every reason," says he, "to be certain from former experience that almost all these protracted cases would have been cured in one half or even one third of the time, if a moderate course of mercury had been resorted to after common applications had been found to fail.

But longer time required without mercury.

The result of this inquiry therefore should by no means induce us to relinquish the use of mercury as of specific influence in general practice; but it is of great importance as offering solid consolation to those who may be labouring under the disease with an idiosyncrasy or acritude of constitution that forbids the use of this specific, and converts it into a poison instead of receiving it as a remedy.

Hence mercury ought not to be relinquished: but the knowledge hereby acquired of great importance.

It is admitted also that the cases of secondary symptoms occur more frequently in the cure of primary symptoms without mercury than where the last has been had recourse to. Upon the former plan of treatment Mr. Guthrie calculates the secondary symptoms to occur about once in ten times; in the latter, once in about seventy-

Secondary symptoms more frequent where mercury is not used.

Proportionate estimate.

* Observations on the Treatment of the Venereal Disease, Medico-Chirurg. Trans. Vol. VIII. p. 557.

five times. But it is singular that in the former case the secondary symptoms are for the most part far milder than in the latter, the bones being rarely, if ever affected. "Insomuch," says Mr. Guthrie, "that some of my friends of great talents and experience have been induced from this to suppose that the greater severity of symptoms, which are frequently met with, have been caused by the exhibition of mercury in the first instance, which aggravated the constitutional disease." Mr. Guthrie, however, ascribes this more lenient show and course of the symptoms to the stricter antiphlogistic means resorted to in the simple than in the mercurial treatment: and endeavours to prove that mercury has no tendency to produce any such aggravation, except when injudiciously employed, or it does not harmonize with the idiosyncrasy, or actual state of the constitution.

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But secondary symptoms milder when no mercury.

Hence the severity of these symptoms ascribed to the mercury.

but erroneously; and to be accounted for otherwise.

It has been asserted, indeed, that in Portugal, where, as we have already observed, mercury is rarely had recourse to, both the primary and the secondary appearances are much more virulent than in England, or under a course of mercury: that the local ulcers are far more apt to slough and become gangrenous, and to run into that encircling phagedænic sore about the glans which has been vulgarly denominated *black lion;* and that a greater proportional number of British soldiers, and even officers, formed part of the public during the Peninsular war, than they are in the habit of forming at home. These facts have been especially noticed by Dr. Fergusson in a valuable paper on the subject;* and they are virtually admitted by Mr. Guthrie; who, however, ascribes the malignity in every instance, to the accidental circumstances of change of climate, and intemperance of habit, rather than to the absence of mercury. "I do not think," says he, "the disease which the troops contracted in Portugal was in the slightest degree more violent than the same kind of complaint at home; neither do I place

Symptoms said to be more severe without mercury in Portugal:

and to run into the sore called BlackLion:

but erroneously; and rather to be ascribed to intemperance, and a hotter temperature.

* Medico-Chir. Trans. Vol. IV.

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the least reliance on what has been said by others about a distemper called the black lion of Portugal, which I do not believe exists. But I perfectly coincide with him (Dr. Fergusson) in opinion that the change from the climate of Great Britain to that of Portugal in the summer, with the different mode of life, does act most powerfully on our northern constitutions, and disposes strongly to inflammatory affections. It is this that rendered the same kind of wounds more dangerous to the British soldiers than to the natives; and it was to this disposition, increased by the greatest irregularity of conduct, and often by intemperance, a vice the natives are not addicted to, that we were indebted for the mutilations which ensued from the venereal disease."

General deductions.

The following calculation of results seems to be a fair expression of the general facts; and in the present state of the question they are too important to be omitted. They comprize the conclusion of the same able writer's remarks upon the subject.

First deduction.

1. "Every kind of ulcer of the genitals, of whatever form or appearance is curable without mercury. This I consider to be established as a fact from the observation of more than five hundred cases which I am acquainted with, exclusive of those treated in the different regiments of guards and which occurred in consequence of promiscuous intercourse.

Second deduction.

2. "Secondary symptoms (and I exclude trifling pains, eruptions or sore throats), that have disappeared in a few days, have seldom followed the cure of those ulcers without mercury; and they have, upon the whole, more frequently followed the raised ulcer of the prepuce than the true characteristic chancre of syphilis affecting the glans penis.

Third deduction.

3. "The secondary symptoms in the cases alluded to, amounting to one-tenth of the whole, have hitherto been nearly confined to the first order of parts; that is, the bones have in two instances only been attacked; and they have equally been cured without mercury.

4. "As great a length of time has elapsed in many of these cases without the occurrence of secondary symptoms as is considered satisfactory where mercury has been used, viz. from six to eighteen months. GEN. VII. SPEC. I. Lues Syphilis. Pox.

5. "The primary sores were of every description, from the superficial ulcer of the prepuce and glans, to the raised ulcer of the prepuce, the excavated ulcer of the glans, and the irritable and sloughing ulcer of these parts. In the inflammatory stage attended by itching, scabbing and ulceration, they were treated for the most part by antiphlogistic and mild remedies; in the latter stage, when the ulcers were indolent, whether raised or excavated, by gentle stimulants. Fourth deduction. Fifth deduction.

6. "The duration of these stages is very different, is often increased by caustic and irritating applications, and is much influenced by surgical discrimination in the local treatment. Sixth deduction.

7. "The last or indolent stage, often continues for a great length of time, especially in the excavated chancre, and raised ulcer of the prepuce. And it appears to me that, in these particular cases, a gentle course of mercury, so as slightly to affect the gums, will materially shorten the duration of it, although in others it is occasionally of no service. Seventh deduction.

8. "Although the secondary symptoms do for the most part yield to simple remedies, such as venesection, sudorifics, the warm bath, sarsaparilla, &c. without much loss of time; that is, in the course of from one to four, or six months; yet, as in the primary ulcers, a gentle course of mercury will frequently expedite, and in particular persons and states of constitution, is necessary to effect a cure: and that a repetition of it will even, in some cases, be requisite to render it permanent."* Eighth deduction.

There is yet one singular feature which remains to be noticed before we close the history of syphilis, and which Wonderful impediment to the propagation of syphilis,

* Medico-Chirurg. Trans. Vol. VIII. p. 576.

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so far as I know, has ever yet been fully brought before the public eye, although established by many of the best reports in the possession of the Army Medical Board; and that is the great difference which exists in the facility with which syphilis, and I may add, the affections that make a near approach to it, as bastard syphilis, and gonorrhœa, are propagated in the East compared with their propagation in the West Indies. These reports have been submitted to me, by the friendship of the Director-General: and the chief conclusion I have been able to draw from them—and it is a conclusion that Dr. Gordon, who was kind enough to go over these reports with me, has long since arrived at from the same documents,—is, that every two regiments in the East Indies furnish, at least, as many cases of both genuine and doubtful syphilis as are furnished by the whole army in the West Indies.

and cognate diseases in the West Indies: as established by returns to the Army Medical Board.

Proportionate occurrence in the West and East Indies.

Tables in proof of such remark.

But the following tables will give the reader an opportunity of calculating for himself, and will show that the difference is sometimes much greater. The report from the whole of the West Indies for the year 1823, which I take as being the latest, is as follows:

West Indies in 1823.

Cases of Syphilis unaccompanied with secondary symptoms	16
Doubtful or Bastard Syphilis	15
Simple Buboes	5
Annual number of cases for the whole of the West Indies in 1823.	36.

First, or Royal Regiment at Trincomali in 1823.

Now the report from the 1st, or Royal Regiment alone, for the same year, stationed at Trincomali, gives 177 cases of syphilis without any subdivision into genuine and doubtful.

Additional tables.

In like manner, during a preceding year, while the 12th regiment of Light Dragoons furnished the following report:

Cases of Syphilis	44
Secondary symptoms	6
Doubtful ulcerated Penis	5
Buboes	2
Cachexia Syphiloidea	7
Gonorrhœa	26
Hernia Tumoralis	15
	105,

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the report for the same year, from the whole of the West Indies, gives

Cases of Syphilis	41
Buboes	29
Hernia Tumoralis	40
	110.

From the uncertainty which still prevails respecting the specific nature of several of the above affections in the minds of many practitioners, they are returned as of a common family; and however unscientific such an arrangement may be in itself, it, at least, enables us to draw a more satisfactory general conclusion, as showing that none of the forms of disease which, in the widest latitude of the term can be referred to a syphilitic origin, are here kept back.

All these diseases returned as belonging to a common family.

But such combination more strongly confirms the remark.

I was, in effect, not a little surprized at finding how few reports respecting syphilis have been sent home from the West Indies, compared with those from the East, till Dr. Gordon convinced me, from the nature of those which have been received, of the difficulty of making out any such reports whatever in particular years; and pointedly directed my attention to a remark in one of them, transmitted by Mr. Tegart, a highly intelligent inspector of hospitals at Barbadoes, as though offering an apology for the scantiness of his returns upon this subject: "One gentleman, Mr. Taylor, of much learning, and great ex-

Hence a frequent difficulty of making returns upon this subject in the West Indies.

Illustrated from Tegart's report.

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perience in this island, who has resided here nearly thirty years, says that in that long period he has only seen two cases of primary disease. The fact is," continues Mr. Tegart, "that syphilis is almost unknown in this country:" alluding to the West Indies generally.

Whence the cause of this difference.

To what then are we to ascribe the wonderful contrast presented to us in these two colonies of the same empire? Is syphilis regulated by some such law as that of plague which, as we have already observed, seems incapable of existing in an atmospheric temperature above 80° or much below 60°; and hence has never been able to obtain a footing in Abyssinia or the south of Arabia, while it has rarely appeared earlier, as an epidemy, than June or July, in our own country? or is it affected by any other meteorological influence? The question is of no small moment: for if it be either the atmospherical temperature, or temperament of the West Indies that produces so striking and beneficial an effect upon the specific poison of syphilis, it may be found that the best asylum we can provide even for those who are actually labouring under the disease, and in its rankest form, is the same quarter: so that Barbadoes or Jamaica may in process of time become as general a resort for syphilitic patients, as Madeira or the South of France for consumptive.

Whether like the plague, suppressed by temperature of great heat.

This question of no small moment.

As the inquiry may be turned to a remedial purpose.

General medical process.

Till we are further acquainted, however, with the cause and nature of these discrepancies than we are at present, we must continue to provide for syphilis the best means of cure we may be able to do at home. And in pursuing this object, it is not to be wondered at, from the observations already offered, that plans of very different kinds, and medicines of very different classes, should not only be had recourse to in our own day, but should have been adventured upon at all times, even when the disease may be supposed to have raged with a far greater degree of malignity than at present.

Different plans and modes of treatment in almost every period.

Hence no small difficulty in arranging them.

From the number and repugnancy even of those that have acquired any considerable degree of reputation, there is no small difficulty in reducing them to any thing like

an intelligible classification. Yet, upon the whole, we may observe that the medicines which have been chiefly had recourse to, or have been found most serviceable in curing syphilis or arresting its progress, are narcotics, diluent diaphoretics, diuretics, drastic purgatives, and those which introduce a large portion of oxygene into the system; practitioners having directed their attention at different times to rendering the vascular fibres inirritable to the specific acrimony of the disease, to expelling it by some of the emunctories opening externally, or to dulcifying it by a chemical combination.

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Of the narcotics, recourse has been chiefly had to opium, conium, solanum, and belladonna, manifestly upon the principle of their being sedatives, and hence rendering the system inirritable to the syphilitic virus. This some of them accomplish in a very considerable and desirable degree; and particularly opium which has been mostly trusted to, and tried upon a wider scale than any of the rest. It moderates and alleviates every symptom; and, from a cause not well ascertained, may be taken in very large doses with less inconvenience in syphilis than in almost any other disease. From its palliative effects it has been supposed by many practitioners capable of producing a radical cure; and numerous histories to this purpose have been published by those whose judgments have been unduly prejudiced in its favour. On these histories it is not necessary to enlarge: they have been long before the world, and have called forth other trials which have not proved equally successful. Narcotics in general, and opium beyond the rest, add considerably to the efficacy of other means, and particularly of mercury; but of themselves they are not competent to remove the complaint, and consequently are not to be depended upon.

Narcotics.

Opium.

Its great use as a palliative.

Hence has been supposed to produce a radical cure;

but erroneously.

The list of warm and diluent diaphoretics that have been employed as remedies in syphilis are very extensive; but it may be sufficient to enumerate the following: mezereon, guaiacum, sarsaparilla, saponaria, bardana,

Warm diaphoretics.

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smilax, and one or two species of asclepias or swallow-wort.

Treatment

All these are supposed to be serviceable by exciting a determination to the skin, and throwing off the syphilitic poison, as various other poisons are thrown off, from the surface: and in very warm climates many of them are said to operate a radical cure; though the statements to this effect are rarely such as we can depend upon. Some of them, moreover, as the saponaria or soap-wort, and smilax or china-root, possess a viscid or unctuous principle, which has been supposed of use in obtunding the acrimony of the poison, and thus blunting its effects even before it is discharged from the body. The soap-wort has the advantage of being found in the hedges of our own country.

Their action how far useful: most so in warm climates.

Sarsaparilla chiefly employed at present.

They have all had their day, and the only one at present in much request is sarsaparilla, of the actual amount of whose virtues it is difficult to speak with precision. Like the lobelia *syphilitica* or blue cardinal flower, which is a purgative plant, it owes its earliest reputation to the American tribes; and when first imported into Europe by the Spaniards about the year 1563, it had the character of being a specific for the venereal complaint. From being extolled, however, too highly, for it never fulfilled this character in the old world, it has since sunk, like many other useful medicines, into a very unmerited contempt, insomuch that Dr. Cullen allows but eight lines to its history and qualities, in the course of which he tells us that if he were to consult his own experience, he would not give it a place in the Materia Medica, as he has never found it an effectual medicine in syphilis or in any other disease.* The London College, however, have evinced a different opinion, for they have adopted it under various forms: and Professor Thomson, of Edinburgh, has been so highly satisfied with its antisyphilitic powers, that he has for some years relinquished

Estimate of its virtues.

Totally discredited by Cullen.

Strongly recommended by Thomson as capable of effecting a cure;

* Mat. Med. Part II. Chap. v. p. 200.

the use of mercury altogether in favour of a mode of practice, which consists chiefly in the employment of sarsaparilla.* Upon a very large scale he has met with very great success; though, like Mr. Rose, he candidly acknowledges that the secondary symptoms of the disease have required a longer time to be overcome under the new treatment than they would under a mercurial.

GEN. VII. SPEC. I. Lues Syphilis. Pox. Treatment, yet less readily than mercury.

There is also a much more powerful objection to its use; and that is, that the secondary symptoms are, in many cases, apt to return soon after the new treatment has been relinquished, or other symptoms not essentially different. The fair pretensions of sarsaparilla appear to be those of a mild stimulant and diaphoretic. It is hence in many cases a useful auxiliary to mercury: but I have chiefly found it succeed in chronic cases, where the constitution has been broken down perhaps equally beneath a long domination of the disease and a protracted, and apparently inefficient, mercurial process. In connexion with a milk diet and country air, and with a total abandonment of mercury, I have here often found it of essential importance, and have seen an incipient hectic fall before a free use of it in a week. Its best form is the old one of the decoction of the woods, of which three or four pints should be taken daily.

A useful auxiliary: and highly serviceable where mercury has itself produced disease.

In France, the same plan has been long in general use, and has been found equally successful. On account of the dearness of sarsaparilla when genuine, M. Etienne Sainte-Marie has been induced to try the Carex *arenaria*, or German sarsaparilla of our old dispensatories, as Gleditch of Berlin had done before him; and though he does not, like Gleditch, regard it as more efficacious, he affirms, after employing it for ten years, that it is at least, of equal value.† Its use is certainly worth reviving in the present day of economizing and experiment.

Carex arenaria or German sarsaparilla.

* Edinb. Med. and Surg. Journ. No. LIII. p. 84.

† Méthode pour guérer les Maladies Vénériennes inveterees, &c. Paris. 1813.

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The syphilitic poison has also been often attempted to be thrown out of the body by exciting the excretories of some other organ than those of the skin or in conjunction with them. Thus the flammula Jovis, or upright traveller's joy, the clematis *recta* of Linnéus, which acts powerfully both on the surface and on the kidneys, is said to have been employed with great advantage, and was at one time in high and extensive estimation. It was given in the form of an infusion of the leaves, and Dr. Stoerck, with his usual liberality, assigns it an extravagant praise, informing us that it effectually subdues all the secondary symptoms of inveterate head-aches, bone-pains, nodes, ulcerations of the throat, and cutaneous eruptions.*

Flammula Jovis.

Lobelia syphilitica.

The lobelia *syphilitica* of the American Indians has a still fairer claim to notice. It is a drastic purgative, uniting something of the stimulant and narcotic powers of tobacco, to which it has some resemblance in its taste. In the simple life and inirritating diet of the American tribes, it is possible that it may have proved as successful as it is stated to have been; but it has completely failed in Europe.

Oxygenous antisyphilitics.

Of the antisyphilitics, whose influence seems to depend on their being loaded with oxygene, the principal are the mineral acids, and the metallic oxydes.

Acids. Nitric and sulphuric.

Of the first, the nitric has chiefly been made a subject of experiment in our own country, though the sulphuric has been employed abroad.† How far it exercises a chemical power upon the syphilitic virus, and forms a new and blander substance with it, is uncertain. Its general effects are, as we might expect them to be, tonic and sedative; whence the appetite is increased, a greater rigidity or firmness is given to the living fibre, and a greater density to the coagulable lymph: the action of the bowels, and even of the bladder, being diminished.

Their pretensions and effects.

* Libellus quo demonstratur herbam veteribus dictam flammulam Jovis posse tutò exhiberi. Viennæ, 1769.

† Crato, Epist. v. 9, 293.

Besides these, it has a particular effect on the mouth approaching to that of ptyalism, for the gums are rendered slightly sore, the mouth and tongue become moist, and in India and other warm climates a real salivation is said to ensue. Under this change the syphilitic symptoms assume a better appearance, and especially those that belong to the primary set: but we have no decided case in which a perfect cure has been accomplished in our own country; though Dr. Scott affirms that in India this has been common. The acid he was in the habit of employing was a direct aqua regia as already noticed in the treatment of jaundice;* and with the internal use of this, he combined that of the acid bath as there also particularly specified. His object was to effect a cure without incurring any of the evils so frequent upon a mercurial course; and to this object the proposed plan has, in his opinion, given complete success. It would have been happy for the world if this success had been permanent and universal; but the plan has since fallen in its reputation not much less in India than in Europe.

GEN. VII. SPEC. I. Lues Syphilis. Pox. Treatment. Aqua regia. said by Scott to produce a radical cure in India. Has not been found to succeed of late.

The metallic oxydes have offered a large field for experiment; and almost all the metals have been had recourse to in rotation, as copper, iron, antimony, mercury, arsenic, and even gold.

Metallic oxydes.

The pretensions of arsenic are certainly considerable: it forms the ordinary medicine employed in syphilis by the cabirajas or native Indian physicians, who depend upon it as a specific. They give it in the form of white arsenic in combination with black-pepper, as we shall notice more at large when treating of elephantiasis, for which also it is esteemed a powerful remedy. The only auxiliary is a cathartic of manna dissolved in a decoction of nymphæa *Nelumbo*.

Arsenic.

Of the effects of any of the preparations of gold we know but little. Many of them were in high repute formerly as a cure for various cachexies, and are said to

Gold.

* Vol. I. Cl. I. Ord. II. Gen. I. p. 398.

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have been used with success in syphilis.* They have since been repeated in France, and are reported to be entitled to all the distinction they have at any time attained; but as a train of experiments upon this subject is still in hand we may hope for more certain information in a short time.†

Antimony. Mercury the only medicine to be relied on in every stage.

Antimony, and perhaps a few other metals are useful auxiliaries; but, in fact, the only metal, and I may add the only medicine, on which we can confidently rely for a general cure of syphilis in all its stages in our own climate, is MERCURY.

All its preparations succeed if sufficiently introduced.

This has been tried from an early period in almost every variety of preparation; and, provided a sufficiency of it is introduced into the system, in every variety it has been found to succeed: so that in the present day the peculiar form is regarded of less importance than on its first use; though we may observe that it seems to be most rapidly efficacious in those forms that introduce the largest proportion of oxygene into the system. And as it operates chiefly, like most other medicines, through the medium of the circulation, when it once becomes mixt with the current of the blood it is equally efficient in the cure of a recent chancre, and a chronic ulceration of the throat.

Its virtues and general action.

Mercury is an universal stimulant, and increases the action of all the secretories at one and the same time; for it operates simultaneously on the intestines, the skin, the salivary glands, and even the bladder; though it displays itself chiefly by its action on the salivary glands. It has also, when given in moderate doses, considerable pretensions to a tonic power, though this is overwhelmed by its stimulant effects when the dose is considerably increased. It seems therefore to unite most of the virtues

* Agricola, Comment. in Pappium, Nürn. 1643.—Ochmen, Feldchirurgus, 8vo. Fr. and Leips. 1750.

† See the Report of A. S. Duportal, M.D. and Th. Pelletier. Apoth. Annales de Chemie. Tom. LXXVIII. p. 38.

of the preceding remedies, excepting the sedative; and hence it is greatly improved by the addition of opium and camphor, which give it the quality it stands in need of.

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Independently, however, of its combining in itself many of the virtues of the preceding remedies, mercury seems also to possess some specific virtue unknown to the rest; for we can associate all the general qualities by a combination of different medicines without producing the same result. Mercury, indeed, to these general qualities adds that of peculiarly stimulating the salivary glands, which the other remedies employed in syphilis do not at all, or never in an equal degree; but that its specific power as an antidote does not depend upon its being a sialagogue is clear, because while it has sometimes excited salivation without effect, it has at other times produced a perfect cure without any salivation whatever, for in some idiosyncrasies the salivary glands are not affected by its irritation.

Seems to possess some specific in addition to its general virtues as an antisyphilitic.

This does not depend on its being a sialagogue.

Dr. Cullen, however, who had a mortal aversion to considering any medicine in the character of a specific, denies that Mercury is a specific in syphilis, as he does also that it is an attenuant of the blood or an antidote to the disease. It is in vain to point out to him its specific influence upon the salivary glands, or its specific action upon their mouths; he denies the whole, and contends that mercury might travel, and perhaps would travel for ever in some other direction, were it not for the friendly interposition of the ammoniacal salts of the blood, which he fancies to have a close affinity with mercury, as he supposes they have also with the salivary glands; in consequence of which, they take the mercury by the hand, and introduce the one stranger to the other:* thus solving the difficulty like divinity in the catastrophe of a drama. The result of the whole, in the opinion of Dr. Cullen, is that

Denied by Cullen to be a specific or antidote or to attenuate the blood.

His hypothesis to account for its action.

Hence in his opinion it is only serviceable as an irritant to all

* Mat. Med. Part II. Ch. XVII. p. 443—450.—See also the present Work. Vol. I. p. 77.

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mercury cures the venereal disease, not by producing any change in the state of the fluids, but entirely by giving a stimulus to the excretories at large, by whatever contrivance it reaches them, and thus increasing the excretions, and washing out the poison from the body.

the excretories.

This view not sufficient to account for its salutary effects.

That it does this is highly probable; but this alone is not sufficient, for fresh poison is continually forming by the process of assimilation, or the conversion of some part of the fluids it comes in contact with into its own nature; since if it were not so, and the minute drop of virus that excited the disease at first remained without any increment, there can be no question that such a general scouring of the system would be unnecessary, and that the ordinary evacuations would be sufficient to throw it off. And hence we have not only to carry away the poison that is actually present in the vessels but to prevent the formation of new.

In what its specific virtue seems to consist.

Now it is in this power of prevention that the specific virtue of mercury seems to consist; and this it is that renders it paramount to all other remedies in the cure of syphilis. It is not only an evacuant but an antidote; for, as we have already seen, it quickens the action of other remedial means when united with them, and far more speedily effects a cure even by itself than any of them. By what means, however, it becomes an antidote, or exerts its specific power, we know not. The matter of a chancre mixed up with a quantity of Plenck's gummy solution of mercury has been applied to a sound person without occasioning either a chancre or any other syphilitic symptoms. And it has hence been supposed that mercury neutralizes the syphilitic virus, and produces a third and harmless substance. As it has been further supposed that it is by the disengagement of the oxygene which the various preparations of mercury introduce into the system, that this effect is accomplished. All this is ingenious and may be true, but the evidence does not come home to the conclusion. Even the experiment with chancrous matter and the mercurial solution has not

This virtue how exerted.

Whether by a chemical combination with the venereal virus, or by a disengagement of oxygene.

been satisfactorily performed; and if the result were as here stated, the matter while it has no power of assimilating the solution into its own nature, as it has the fluids of the human body, may only have been rendered inert by simple dilution.

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We have said, that provided a sufficient quantity of mercury be introduced into the system, the particular preparation is of no great importance. Van Swieten preferred the oxymuriate, and every one followed his example. The calcined mercury came next into popularity and triumphed over every other form. It was the leading article of most of the secret remedies that were sold for the complaint and especially of Keyser's pills, the receipt for which was purchased with great formality by the French government, with an express provision not to make it public till the inventor's death.* These pills, however, which consisted of nothing more than mercury calcined by a needlessly operose elaboration, and mixed up with manna, were found in many cases to irritate the bowels even when united with aromatics and opiates; and hence they gradually yielded on the Continent to Plenck's solution, which still holds a considerable sway.

Oxymuriate formerly preferred to other preparations. Afterwards calcined mercury. Keyser's pills.

In our own country, it is now most usual to employ the mercurial pill, or calomel, either alone or together with mercurial ointment. Yet, whatever plan is preferred, much caution is necessary in carrying it into effect; for the older practitioners who employed larger doses, frequently did as much mischief to the constitution by the antidote as it had received by the infection. If calomel be employed, about two grains a day will commonly be found sufficient, guarded when necessary by a grain of opium, and if the ointment be preferred, half a drachm of the strong mercurial ointment may be rubbed in night and morning. If the disease be not severe or of long standing, it will not be necessary, with a little management, to

Mercurial pill. Calomel: Mercurial ointment. Large doses often mischievous. Salivation not always necessary.

* Des Dragées, ou Pilules de M. Keyser. Par Richard de Hautesierck. Recueil d'Observations de Medicine des Hopitaûx Militaires, &c. Paris, 1766.

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produce salivation, which in most instances may be regarded only as a test that the system is thoroughly impregnated with the medicine: but in chronic cases we ought not to be satisfied without it.

Practice of large doses.

In the course of the present work, and the observation is applicable to other doctrines than those of medicine, we have often seen that extremes lead to extremes: and hence while many practitioners have been reviving the attempt to cure syphilis entirely without mercury, others have revived that of attacking it with very large doses. The last has chiefly been confined to those who have been employed in warm climates and been friendly to the same practice in dysentery and yellow fever. In syphilis, however, they seem to have been somewhat more successful than in the other diseases, doubtless from the more decidedly specific influence of mercury over the former. The dose, with these gentlemen, is the usual one of a scruple, which in our own climate is repeated daily for three or four days in succession; but in warmer climates, four or even five times in twenty-four hours. In various cases the effects on the stomach and bowels are severe, and in all cases a considerable degree of nausea is excited, and the appetite is entirely suppressed. But upon the whole the bowels and general system are for the most part less affected than might be supposed: ptyalism is often excited in two or three days, and a constitutional improvement speedily shows itself. So that where the treatment does not disagree with the idiosyncrasy the cure is rapid, and perhaps radical: the individual being usually set at liberty in a fortnight or three weeks. But such a practice must not be attempted indiscriminately, and should indeed be used with great caution: for it has fallen to the author's lot to know of not a few instances in which the constitution has been so completely broken down by the very onset of this energetic plan, as to require not two or three weeks, but many months before the patient was re-enabled to take his station in society: to say nothing of the virulence which has been added to

By whom revived.

Sometimes rapidly successful:

but often unadviseable, and highly mischievous.

all the symptoms of the case whether primary or secondary, in dyscrasies or idiosyncrasies which are hostile to the use of mercury. There can be no doubt, indeed, that a long perseverance even in small doses, under like circumstances, will not unfrequently produce as lamentable an effect. But in this case we can hold our hand much more easily on the first appearance of mischief. GEN. VII. SPEC. I. Lues Syphilis. Pox Treatment.

In all cases of the use of mercury, but particularly in cases of salivation, care should be taken to avoid cold, and flannel should be worn next the skin; for it is important that the excretories should harmonize in an increased defluxion. It it also of importance that the diet be light and simple, as the pulse is usually accelerated, and, by a stimulating regimen, would be so much quickened as to do serious mischief. Mr. Hunter lays no stress upon this point, but it ought by no means to be neglected. Caution necessary when employed.

If a buboe have formed in the groin the murcurial ointment is best rubbed in a little below it, as it would increase the inflammation if applied to the tumour itself. In about a week or ten days, the mouth will become slightly sore, when the further use and proportion of the ointment or other preparation must be regulated by the violence or duration of the complaint. Where salivation is determined upon, the flux should be suffered to continue for about a month.

An injudicious use of mercury, or indeed any use of it, in highly irritable habits, will sometimes excite a very troublesome erythema that spreads itself in trails or patches over the whole surface; commonly however commencing about the genitals, and lower limbs. It is accompanied with a painful tenderness and itching of the skin, and, as the erythema meanders onward, the trails or patches first observed heal as new ones make their appearance. We have already glanced at this affection under the vesicular species of ERYTHEMA.* Mercury Mercurial erythema.

* Vol. II. Cl. III. Gen. VI. p. 360.

GEN. VII. SPEC. I. Lues Syphilis. Pox. Treatment.

must in this case be desisted from, the bowels be loosened with some gentle aperient, and the irritability opposed by sedative and mild cardiacs as camphor, guaiacum, and sarsaparilla; and particularly by the mineral acids.

SPECIES II.

LUES SYPHILODES.

Bastard Pox.

THE GENERIC ULCERS INDETERMINATE IN THEIR CHARACTERS; SYMPTOMS IRREGULAR IN THEIR APPEARANCE; USUALLY YIELDING SPONTANEOUSLY; VARIOUSLY AFFECTED BY A COURSE OF MERCURY.

GEN. VII. SPEC. II.

I HAVE already observed, at the opening of the present genus, that the species before us is designed to include a multiplicity of affections which in many of their signs have a close resemblance to syphilis, but differ from it in the progress of the symptoms as well as in the means that are necessary for a cure.

Syphilodic lues of antiquity.

Such affections are of high antiquity, far higher, indeed, than those of syphilis, and some of them appear to be glanced at in the sacred records. A few of them may perhaps have arisen in much later times, and may be arising at present.* By Celsus the subject is touched upon scientifically: it has been taken up in modern times

Subject lately pursued by

* Pearson, Observations on the Effects of various Articles of the Materia Medica in the Cure of Lues Venerea, 2nd Edit. p. 58.

by Mr. Hunter with that spirit of inquiry which peculiarly distinguished him,* and has since been pursued by Mr. Abernethy, Mr. Carmichael, and various other surgeons and physiologists, with a kindred comprehension and genius:† and the track which they have traced out in England is precisely parallel with the march which M. Etienne Sainte-Marie has of late years pursued in France, conceiving himself, according to his own account, to have been the original discoverer of these distinctions; which is the more extraordinary, since this writer, as we have already had occasion to observe, believes in the exploded doctrine of the identity of syphilis and what is commonly called gonorrhœa.‡ The subject, however, is still in its embryo. Mr. Hunter considered his own remarks rather as hints for others to prosecute than as a complete account of it. And though Mr. Abernethy has accumulated facts and cases, and ably illustrated them with observations that sufficiently establish these hints, and give something of a body to the outline, we are still in want, as we have already seen, of distinctive characters, and cannot determine with any degree of accuracy whether the wide group of complaints that fall within the present range of contemplation, are mere varieties of a common species produced by a common poison, or distinct species dependent upon distinct poisons, as discriminate from each other as all of them are from proper syphilis.

GEN. VII. SPEC II. Lues syphilodes. Bastard pox.

Hunter and Abernethy.

Etienne Sainte-Marie.

Still open to investigation.

Under the last species we had occasion to notice Mr. Hunter's pathognomic criteria of genuine syphilis: first, that it never ceases spontaneously; secondly, that it is uniform and progressive in its symptoms; and thirdly, that it is only to be cured by mercury.

Hunter's pathognomic marks of genuine syphilis.

Could this view of the disease be strictly supported, we should have a tolerably distinctive character by which

Called in question by late experiments.

* Treatise on the Venereal Disease.

† Surgical Observations on Diseases resembling Syphilis. Lond. 1810.

‡ Methode pour guerir les Maladies Vénériennes Invétérées, &c. Paris, 1818.

GEN. VII. SPEC. II. Lues syphilodes. Bastard pox.

to discriminate the preceding from the present species; but sufficient proof has been offered that not one of the three points holds good without a considerable degree of modification, whether in respect to the primary or the secondary symptoms of these maladies.

Whether distinguishable by immediate and direct signs.

Very ingenious attempts have since been made to distinguish these diseases, not by their general march and mode of cure, but by their immediate and prominent signs, that of the true syphilitic chancre in the first stage, and those of the peculiar nature of the spots, the nodes, or the ulcers in the second. But the close approach to syphilis at times of misaffections whose history, when minutely investigated, has clearly proved them to have issued from other sources than syphilis, have in a great measure levelled all such land-marks, and nearly left us in extreme cases without a clue.

Chiefly so from the general history of the two diseases.

It is, after all, therefore, rather from the general history of the different examples, in all their bearings than from the individual symptoms, that we can alone arrive at any sound or satisfactory means of referring them to a syphilitic or a different origin. If we can strictly rely upon the assertion, or know, as a fact, that there has been no impure connexion; if we cannot perceive that there has been any primary ulcer; if we find that the symptoms, whether primary or secondary, readily give way spontaneously, or by other remedies than mercury; or if we have proof, from the first, that they are exasperated by this last medicine, whatever be the approximation of such symptoms to those of genuine syphilis, we may rest pretty well assured that the disease is syphiloid rather than syphilitic lues. In the first case, indeed, unquestionably so, and nearly unquestionably so in the second and third.

Constitutional symptoms of like kind often from various local causes.

It is well known that constitutional derangement in an irritable habit or idiosyncrasy, will often follow from other local causes of various kinds, and often from what is ordinarily of very slight import. It is hence that the general health in some persons suffers from such cutaneous eruptions as rose-rash, herpes, or itch. Gonorrhœa

has perhaps at times, as we have already remarked, affected the constitution in like manner, and even thrown over the skin, spots that have been mistaken for those of genuine syphilis. And there is hence reason for believing that even an incidental and unspecific irritation of the prepuce or the glans, may, in the same way, occasionally so far simulate the march of the same disease as to exhibit a very close semblance to the raised ulcer, or the excavated chancre or even the phagedænic slough; or passing by these first symptoms, that it may mimick as closely those of the second stage of the disease. And as it is now pretty generally admitted on all hands, that morbid and irritative secretions of various kinds, independently of those of syphilis or even gonorrhœa, are thrown forth and accumulate in the sexual organs of contact, we can trace a variety of sources of both local and constitutional affection which, issuing from the same seat, may assume something of a family character; to say nothing of those more wonderful resemblances of the secondary symptoms of syphilis which have sometimes been found to occur without any previous local contagion, and in the most unspotted purity of single life.

GEN. VII. SPEC. II. Lues syphilodes. Bastard pox.

Sometimes without local disturbance of any sort.

A consideration, therefore, of such diseases or varieties of diseases, as are thus found to approximate the general character of syphilis, though issuing from sources widely distinct, and possessing in the midst of such approximation a few discriminative marks, perhaps at all times and under all circumstances, however they may hitherto have eluded the prying eye of the pathologist, is evidently called for; and it is the object of the present subdivision to embody them, as far as the footsteps of observation will at present allow.

Such cases to be arranged distinctly from those of genuine syphilis:

and hence the present species.

We have thus far, however, followed them into their extremes, in which alone their symptoms appear merged in those of syphilis; for in the greater number of cases a distinction is not very difficult either in the local or the constitutional attack.

Such close resemblances, however, only in extreme cases of the present species.

In illustration of these remarks, I might refer to the ob-

Illustrated.

GEN. VII. SPEC. II. Lues syphilodes. Bastard pox.

servations of those who have been attentive to the subject on a large scale; but I refer more particularly to the collection of cases which Mr. Abernethy has printed in the work already adverted to.

General description.

The disease ordinarily commences with local symptoms, though not always: but the local symptoms have a less resemblance to those of genuine syphilis than the constitutional by which they are succeeded. A few foul and highly irritable sores are unexpectedly discovered on the genitals, commonly larger than chancres, and less thickened and indurated, about the size of a sixpence, and frequently sprouting with fungous granulations. Rarely, but very rarely, they have the guise of a true chancre: so rarely, indeed, that of the twenty cases contained in Mr. Abernethy's book, the fifth is the only one that answers to this description. These are sometimes succeeded by buboes; and sometimes not. And where buboes take the lead they run their course more rapidly, and with more violent inflammation than in the true disease, and spread to a greater number of circumjacent glands. These mostly, if not always, heal by the ordinary means without mercury, or constitutional symptoms of any kind. But not unfrequently, in a few weeks or months they are followed by a soreness and ulceration of the tonsils, copper-coloured spots over the body, and nodes or swellings of the periosteum in various bones; and sometimes these symptoms change their order of succession, or appear single.

Proper chancre rare.

Constitutional symptoms sometimes take the lead.

In a few instances, the constitutional symptoms take the lead and the local follow, of which Mr. Abernethy's fourth case affords an example. The patient here perceived, first of all, a small ulcer on the breast near the nipple, after having suckled a nurse-child about four months. It was of the size and shape of an almond, and was ascribed to the child's having a sore nose and lips. A gland in the axilla soon swelled and subsided: but in about two months the patient had a severe febrile attack, accompained with a sore throat; from this she soon recovered,

but had shortly afterwards a copper-coloured eruption scattered over the body; and upon the disappearance of this, white blisters about the pudenda which gave her pain in walking. About a week afterwards her husband found a sore on the penis covered by a black scab, of about the size of a sixpence, with a base neither hard nor thick, but with the surrounding skin much inflamed. Another formed in the course of the lymphatics towards the groin: the inguinal glands enlarged, and one of them suppurated; and an eruption of a papulous erythema, ushered by a few febrile symptoms, followed in about three weeks. The sores were twice touched with lunar caustic, and, as well as the bubo, were afterwards washed with calomel in lime-water: they gradually healed. Both patients recovered, the wife with little assistance from mercury, having taken only a few compound calomel pills with small doses of nitric acid; the husband without mercury altogether, except that a dose of calomel was once administered with other aperient drugs as a purge.

GEN. VII. SPEC. II. Lues Syphilodes. Bastard pox.

In all these cases, we meet with a virus that seems to be more active and irritating than that of genuine syphilis, but which, while it pursues, though with much irregularity, the same general path, runs through its course much quicker, and is more effectually coped with by the natural strength, or remedial instinct of the constitution. And hence, all that we are here called upon to do in the way of treatment is, to support the general vigour, and second the instinctive effort. This is best to be accomplished by tonics and gentle stimulants, and, where necessary, by sedatives. The mineral acids are the best means of supplying the first intention; camphor, the decoction of the woods, and the compound calomel pill, where small doses of mercury do not irritate, the second; and opium the third: though to this last it will rarely be necessary to have recourse at all.

Syphilodic virus more active and irritating than that of syphilis, but more effectually opposed by the natural powers of the constitution.

The distinction between these affections and genuine syphilis is frequently difficult, but of importance: since,

Hence mercury in full doses need-

GEN. VII. SPEC. II. Lues syphilodes. Bastard pox.

as a full use of mercury seldom seems to do good, and often does serious mischief in the former, such a plan has a chance of overwhelming the constitution with a second disorder instead of freeing it from a first.

less or mischievous.

To this family of maladies we are probably to refer the disease, which, for a century or two, has been known in Scotland by the name of SIBBENS or SIVENS, literally rubula, or rasp-berry eruption: and which seems to be a variety of lues rendered hybrid by passing through a constitution already contaminated with genuine RUBULA or yaws. The local symptoms have a much nearer resemblance to those of bastard-pox than of genuine syphilis, but, in its constitutional progress, after the ordinary affection of the fauces, the disease has a tendency to throw forth, over the surface, an eruption of tubercles, which speedily degenerate into fungous ulcers resembling yaws, rather than an eruption of copper-coloured spots: which tubercles sometimes show themselves also in the throat itself. The constitutional disease spends itself chiefly on the surface, and the bones are rarely affected. With these exceptions we may agree with Dr. Gilchrist,* and Mr. Hill of Dumfries,† that it has not a symptom which does not accompany the lues venerea (meaning syphilis) through all Europe; that both are equally infectious; both only communicated by sexual intercourse or other familiar contact; and both beneficially treated by mercury; which, they affirm, is the only remedy to be depended on. Mr. Hill tells us that it was introduced into the vicinity of Dumfries, about the year 1772, "by some pocky soldiers, who, to prevent their debauching in town, were disposed through the neighbouring villages." Even upon his own showing, however, a much looser and blander exhibition of mercury than is sufficient for the cure of a confirmed syphilis, will effect this in sibbens; for he adds, that "by the employment of a mild

Sibbens related to the present group of diseases.

Its nature explained.

First appearance at Dumfries.

Mild administration of mercury alone necessary.

* Account of a very infectious Distemper, &c.

† Cases in Surgery; to which is added an Account of the Sibbens.

preparation of this metal he has cured numbers without confining them to their houses even in frosty or snowy weather." It is probable, therefore, that sibbens might be eradicated by other means as well; but these gentlemen, notwithstanding the peculiarity of many of its symptoms, regarded it as a genuine syphilis; and, in consequence, did not direct their attention to any other mode of treatment.

GEN. VII. SPEC. II. Lues syphilodes. Bastard pox.

GENUS VIII.

ELEPHANTIASIS.

Elephant-Skin.

SKIN THICK, LIVID, RUGOSE, TUBERCULATE; INSENSIBLE TO FEELING; EYES FIERCE AND STARING; PERSPIRATION HIGHLY OFFENSIVE.

Origin of the generic term.

GEN. VIII. THE Greeks denominated this disease ELEPHAS OR ELEPHANTIASIS, because the skins of persons affected with it resembles that of the elephant in thickness, ruggedness, insensibility, and dark hue. Thus applied, therefore, the term imports *elephant-skin:* in the same manner as the same national school denominated dandriff pityriasis, or *bran-skin*, from the skin, under this disease, resembling branny scales; and another sort of scaly malady, ichthyiasis, or *fish-skin*, from the resemblance of the skin, when thus affected, to the scales of fishes. There are, however, two diseases of a very different kind, which occur in the translations of the Greek and Arabic writers under the name of elephas, elephantia, or elephantiasis; that immediately before us, and the thick leg of Barbadoes and other hot climates: and, as the former of these has also, by many of the Arabian writers, been called lepra or leprosy, and especially black leprosy, though as distinct from genuine leprosy as it is from the thick-leg; and, as the common term lepra has been continued in the translations of such writers, and copied

Two diseases possessing the same name:

which has also occasionally been applied to leprosy.

from them by writers of our own times, an almost impenetrable confusion had been thrown around the whole of these diseases; and they have, even by modern writers, been strangely huddled together, and contemplated as mere modifications of one and the same malady, or as having some other connexion which does not in reality exist.

GEN. VIII. Elephantiasis. Elephant-skin. Whence great confusion among the writers.

My attention was particularly called to this subject several years ago by an application from Dr. Bateman, who was then preparing his work on Cutaneous Diseases for the press, to assist him in unravelling it from the thorny maze in which it was at that time enveloped; and, as the following letter from him, written in consequence of my acceding to his request, shows the real difficulty of the case, and is highly creditable to the activity of his mind, the reader will be obliged to me for introducing it.

The author applied to by Bateman to examine and settle the question.

"In order to give you the least trouble possible, in the research which you were good enough to promise to make for me this morning, I wish to state in a few words, the object of my enquiry. I believe the proper tubercular *elephantiasis* of the Greeks was called *juzam*, or *aljuzam* by the old Arabians (*dsjuddam* and *madsjuddam* by the moderns, according to Niebuhr.)*

Bateman's letter to the author.

"If so, do the other Arabian writers also designate the proper elephantiasis, by the same appellation?—For instance, is it used by Haly Abbas?†

"Again, what is the Arabic term applied to the THICK LEG (which most of the translators call *elephantiasis*, but which the translator of Haly Abbas calls *elephas*, thus distinguishing it from *elephantia?*)—The *thick leg* is described by Haly Abbas,‡ by Avicen,§ by Rhases‖

* See Avicen. Quart. III. or Lib. III. Fen. III. Tract. III. Cap. I.

† Theoricè, Lib. VIII. Cap. XV., and Practice Cap. IV. In which passages the translator has used the word Elephantia, and not Lepra, like the other translators.

‡ Theoricè, Lib. VIII. Cap. XVIII.

§ Lib. III. Fen. XXII. Tract. I. Cap. XVI. or XVIII.

‖ Ad Almanzor. Lib. IX. Cap. XCIII.

GEN. VIII. Elephantiasis. Elephant-skin.

and by Avinzoar.* The translators of the other works in these places, use the word *elephantia.*

"Thus, the proper *elephantiasis* is called *elephantia* by (the translator of) Haly Abbas, and *lepra* by (the translators of) Avicen, Rhases, and Avinzoar.—And the *thick leg* is the *elephas* of the former, and the *elephantia* of the latter.—My chief inquiry is, whether the difference is only among the translators, or whether there is likewise a want of uniformity in the nomenclature of the original writers.

"En passant, I may observe, that some farther confusion has arisen among the translators, respecting another *leprous* disease, as it has been called, which the Arabians seem to have considered as having some affinity with the proper elephantiasis (juzam,) but yet is materially different in its symptoms; and which they have denominated *baras*, or *barras*, and *albaras*, and which appears to accord accurately with the *leuce* of the Greeks, and the *vitiligo* (species 3.) of Celsus.—If the Hebrews did not apply the term (translated) *leprosy*, to several affections of the skin (such as the scaly lepra Græcorum, the psoriasis of Dr. Willan, and the *leuce*, which I suspect they did;) this leuce or baras would seem to be the *unclean* leprosy described in Leviticus, Cap. XIII.†

"If your knowledge of the oriental languages will enable you, together with your knowledge of these diseases, to disperse some of the thick mist in which the translators have enveloped them, I should be exceedingly glad to partake of a little of your light."

Substance of the author's reply

The substance of the author's reply to this letter, already given in a note to the volume of Nosology, but

* Lib. II. Cap. XXVI.

† This is the opinion of two learned old Germans, Leon. Fuchs, in his Paradoxa Medicinæ, Lib. II. Cap. XVI.; and Gregor. Horst. in his Epist. to Hopner, inserted in his Observations Medicinales, Lib. VIII. Obs. XVIII. —And Sennert seems to be of the same opinion. Pract. Med. Lib. V. Part I. Cap. XL.

which ought not to be omitted on the present occasion, was as follows:

Gen. VIII. Elephantiasis. Elephant-skin. Disease when first made known to the Greeks.

The Greeks became first acquainted with the elephantiasis from their casual intercourse with Egypt. To this quarter Lucretius, adopting the common opinion, ascribes its origin:

> Est Elephas morbus, qui propter flumina Nili,
> Gignitur Ægypto in media, neque præterea usquam.*
>
> High up the Nile, mid Egypt's central plains,
> Springs the Black Leprosy, and there alone.

Probably derived from Arabia:

Arabia, however, seems rather to have been the prolific source of this terrible scourge than Egypt: if we may judge from what seems highly probable, namely, that this is the disease with which Job was afflicted in Idumea, a part of Arabia, as described in the sacred poem that bears his name under the appellation of נגע צרעת "the stroke of the scourge," and which affords, without question, the most ancient record in the world, composed in a mixt language of Arabic and Hebrew; and if we add to this the still more powerful argument that the Arabic name of the disease has extended itself all over the east, and is almost the only name by which it is known in Egypt, Persia, and India, in all which regions the disorder is about equally common. Yet the Arabic name is not *elephas* or *elephantiasis*, but juzam, literally "disjunction, amputation," vulgarly, indeed, and more generally pronounced and written judam, from a root which imports "erosion," "truncation," "excision;" evidently referring to the destructive character of the disease, and the spontaneous separation of the smaller members as the fingers and toes when severe in its progress.

and thence propagated over all the east.

Named juzam by the Arabians.

* De Rer. Nat. VI. 1112.

GEN. VIII. Elephantiasis. Elephant-skin.

The Arabians, however, have a malady, but of a very different kind, to which THEY also give the name of elephas, or *elephant-affection*, in their own language dal fil, which is literally *morbus elephas*, and which they sometimes contract to fil, or elephas alone. It is the "swelled, tumid, or Barbadoes leg," of modern writers, the bucnemia *tropica* of the present system. And, on this account, when learning, and especially medical learning, found an asylum, during the dark ages, at the splendid courts of Bagdat, Bassorah, and Cordova, and the best Greek writers were translated into Arabic, or the best Greek and Arabic into Latin, two different diseases were found to possess a like name: for the Greeks, notwithstanding that they had elephantiasis to signify juzam, could only translate dal fil by elephantiasis also. And hence arose that confusion of the two maladies which has continued to the present moment, notwithstanding the wide distinction between them, the one being a tubercular affection of the whole body, while the other is a scaly affection of only particular parts, and commonly of not more than a particular limb.

Whence confounded with bucnemia, or the Barbadoes-leg.

Whence leprosy confounded with the same.

The leprosy properly so called, the *leuce* (λευκη) of the Greeks, and the baras or beras of the Arabians, was, by many of the Arabian physicians, and very generally among the people, supposed, in various cases, to terminate in juzam or elephantiasis, as though this also was nothing more than a different stage or degree of the same disease. And hence another error and perplexity in medical study. Alsahavarius thus unites them, and they are jumbled together or explained alike in nearly all the oriental dictionaries; in which beras or leprosy, and juzam or elephant-skin, are, almost without an exception, regarded as convertible terms. This oriental confusion of two very different diseases was readily copied by the Latin translators, till at length, both in the east and west, beras or lepriasis, though literally scale-

The confusion continued by the Latin translators of the Greeks.

skin, became a sort of family name for almost every foul disfigurement of the skin, whether tubercular or scaly, cutaneous or constitutional. And, on this account, elephantiasis and leprosy, and several other diseases even in the nosology of Linnæus are included under the term lepra; all which the disciples of this school, extending a principle very widely adopted by them, ascribe to animalcules drunk in with the common beverage of water, especially the gordius *marinus*. GEN. VIII. Elephantiasis. Elephant-skin.

The author ought not to conceal Dr. Bateman's acknowledgement of this communication, and his assent to its explanation contained in the following opening of a letter received a few days afterwards.

"I thank you sincerely for your ready and interesting communication, which satisfactorily explains the point, respecting which I was the least able to obtain satisfaction from the translators, viz. that the Arabians had applied the term *elephant* (*elephas*, according to the able translator of Haly Abbas,) or fil, as you state, to the swelled leg. This is some apology for the appropriation of the Greek term elephantiasis (though it actually denoted a different disease) to the Arabian thick leg; but the appropriation of *lepra*, which is never mentioned by the Greeks but as a 'superficial, rough, and scaly affection,' to the tubercular juzam, has unfortunately misled and confused us for a thousand years." Bateman's acknowledgement to the author.

Dr. Bateman adds, that he apprehends the term elephantiasis had also a reference to the *magnitude* and DURATION of the disease, independently of the appearance of the skin. And it is very probable, as the malady was likewise sometimes denominated *leontiasis*, that the formidable and frightful aspect of the patient labouring under it, may have been hereby compared to the general exterior of both the elephant and the lion: for while Aretæus tells us, in describing it, that "it is disgusting to the sight, and in all respects terrible like the elephant," Avicenna affirms, "it renders the countenance terrible to look at, and somewhat of the form of the lion's visage." Elephantiasis called also leontiasis, and why.

GEN. VIII. Elephantiasis. Elephant-skin.

The necessity of that stricter investigation into the nature of genuine elephantiasis thus anxiously desired by Dr. Bateman, will be the more obvious when the reader learns, that in the classical work of Professor Frank, it is arranged as a species of lepra; as is also ichthyiasis, and various other cutaneous affections that should take their station in distinct quarters.*

How confounded by Frank.

Species of elephantiasis.

Besides the elephantiasis of the Arabians we have a disease of the same kind, or which seems to be of the same kind, common to some parts of Italy, and another common to some parts of Spain; both which seem, indeed, to have issued from the Arabian stock. And hence elephantiasis, as a genus, offers us the three following species:

1. ELEPHANTIASIS ARABICA. ARABIAN ELEPHANTIASIS.
2. ——————— ITALICA. ITALIAN ELEPHANTIASIS.
3. ——————— ASTURIENSIS. ASTURIAN ELEPHANTIASIS.

* De Cur. Hom. Morb. Epit. Tom. IV. p. 211. 1792.

SPECIES I.

ELEPHANTIASIS ARABICA.

Arabian Elephantiasis. Black Leprosy.

TUBERCLES CHIEFLY ON THE FACE AND JOINTS; FALL OF THE HAIR EXCEPT FROM THE SCALP: VOICE HOARSE AND NASAL: CONTAGIOUS AND HEREDITARY.

GEN. VIII. SPEC. I. This form the oldest and most inveterate.

THIS species, which is the oldest of the three, is also the most inveterate: for we do not know that the Italian species is contagious, though, like the Arabian, it appears to be hereditary: while the Spanish is, perhaps, neither contagious nor hereditary.

In a few regions seems not to be contagious though hereditary:

In some parts of the world, indeed, even the present species is said not to be contagious, though all the writers concur in its being hereditary in every quarter. Thus Dr. Schilling, while he admits the latter effect, asserts that it is not contagious in Surinam: and Dr. T. Heberden asserts the same of this disease in Madeira. "I not only," says he, "am a daily witness of communication between lepers and other people without the least ill consequence, but know several instances where a leprous husband (afflicted with the Arabian leprosy or elephantiasis) married to a sound wife, has cohabited with her for a long series of years, and had several children by her, without her having contracted the least symptom of the disorder, although the children have inherited it; and vice versâ between a leprous wife and sound husband."*

* Medical Transactions, Vol. I. p. 35.

GEN. VIII. SPEC. I. Elephantiasis Arabica.

Arabian elephantiasis.

Black leprosy.

but generally possesses both qualities.

General description

That the disease, however, is contagious as well as hereditary in India and Arabia, we have the concurrent testimony of all the medical writers of both countries, native as well as foreign; so that there can be no doubt upon the subject. And hence, the Madeira and Surinam juzam should seem to be a variety of the oriental, influenced by peculiarity of climate, or some other incidental cause.

This severe malady, wherever it shows itself, is sometimes slow in its growth, and continues many years without deranging the functions of the patient: yet great deformity is advancing upon his external make. The alæ of the nose become swelled and scabrous, and the nostrils are preternaturally dilated; the lips are tumid; the external ears, particularly the lobes, are enlarged and thickened, and beset with tubercles. The skin of the forehead and cheeks grows dense and hard, and forms large and prominent rugæ, especially over the eyes; the hair generally, except on the head, falls off; the voice becomes hoarse and obscure; the external sensibility is obtunded or totally abolished, so that pinching or puncturing gives no pain. The tubercles at length begin to crack, and ulcerate; ulcerations appear in the throat and nostrils; the breath is intolerably offensive; the palate destroyed; the nose falls off; the fingers and toes, from the increased depth and virulence of the ulcerations, become gangrenous, and separate, and drop off one after another. The mental powers suffer less than in the two other species: the dreams, however, are greatly disturbed, the manners, for the most part, morose and melancholy; and sometimes there is an inextinguishable desire of sexual intercourse.

Prevalent in Norway and Iceland.

This disease is also known in the high northern latitudes of Norway and Iceland. In the last place, it is peculiarly prevalent, produced, as Dr. Henderson justly observes, by the rancidity of the food usually fed on, wet woollen cloths, an insalubrious air, and want of cleanliness. It is called "Likthra," or "Putrefaction:" and

a hospital is established for it in each of the four quarters of the island. It seems to be here both infectious and hereditary. "In its primary stage," says Dr. Henderson, "its symptoms are inconsiderable. A small reddish spot, scarcely larger than the point of a needle, breaks out at first about the forehead, nose, corner of the eyes, and lips: and in proportion as it increases other pustules make their appearance on the breast, arms, arm-pits, which generally dry up in one place and break out in another without pain, till the disease has considerably advanced, when they cover almost the whole body, give the skin a scabrous appearance, stiffen it sometimes in shining scales which fall off like dust, sometimes in malignant tumours and swellings. The patient, in the mean time, labours under lassitude of body, anæsthesia and lowness of spirits." The miserable progress is nearly a transcript of the description just given. The patient is so worn out with fatigue and melancholy, as to be often tempted to make away with himself. He surrenders one part of the body after another to the insatiable malady; "till at length," says Dr. Henderson, "death, the long-wished-for deliverer, comes suddenly and puts an end to his misery."*

GEN. VIII. SPEC. I. Elephantiasis Arabica. Arabian elephantiasis. Black leprosy. Its appearance in these regions.

Mr. D. Johnson, of the Bengal establishment, ascribes the disease in India to nearly the same causes as Dr. Henderson in Iceland. It is found principally among the poorer castes, and "attacks chiefly such people as have their feet and hands frequently in cold water or earth, such as the peasants in the low marshy countries of Bengal and Orissa:—Dobys (washerwomen) and Mollies (gardeners) in the upper provinces of India; and I conceive that cold and poorness of blood cause the circulation in the extreme capillary vessels to become too languid; the consequence is a gradual decay or depolution of these

Its appearance and character in India.

* Iceland, or the Journal of a Residence in that Island, Vol. I. p. 295. 8vo. Edin. 1813.

GEN. VIII. SPEC. I. Elephantiasis Arabica. Arabian elephantiasis. Black leprosy.

parts." This writer admits that the disease appears in hereditary descent, but as the different trades and occupations of the natives descend hereditarily also, he has some doubt whether the latter may not be the sole cause of its appearing in successive generations, instead of a family taint.*

A peculiar variety of the disease.

There seems to be a variety of this disease in which a tumour of a larger size than the rest seats itself in the inguinal glands, sometimes in both glands, and is subject to a regular paroxysm of inflammation once in about every fourth month, preceded by shivering and accompanied with a smart febrile excitement. These symptoms usually subside in three or four days, and leave the tumour as before. But not unfrequently that on the one side, or on the other, rarely or never on both sides, advances to suppuration, and produces a troublesome sore. Dr. Adams met with cases of this kind in Madeira, and Dr. Kinnis has since observed the same in the Isle of France :† thus giving the disease an approach towards

BUCNEMIA TROPICA.

Medical treatment.

The cure is extremely difficult; but a course of warm diaphoretics succeeded by tonics, and especially the metallic tonics, seems to have constituted the most successful plan. Hence a free use of sarsaparilla, mezereon, or guaiacum, has been found beneficial; and mercurial alteratives still more so; though salivation appears to have been uniformly mischievous. Even the lobelia has had its advocates, and, upon the ground of its proving salutary in syphilis, it has probably also been sometimes serviceable in elephantiasis. Dr. Schilling endeavours to increase the determination to the skin, by advising a use of the warm-bath and gentle exercise, and embroca-

Diaphoretics succeeded by tonics.

* Miscellaneous Observations on certain indigenous Customs, Diseases, &c. in India. By Daniel Johnson, Esq.

† Observations on Elephantiasis as it appears in the Isle of France. Edin. Med. Journ. Oct. 1824. p. 289.

ting the body with spirit of wine or rum or exposing it to a vapour-bath of mastic, olibanum, benzoin, or lavender.

GEN. VIII. SPEC. 1. Elephantiasis Arabica.

Arabian elephantiasis.

Black leprosy.

Treatment.

In India the cabirajas, or native physicians, after bleeding and purging, immediately apply to the metallic tonics, and particularly to the white oxyde of arsenic, which they give as in the case of syphilis, and indeed of various other impurities of the blood, in the form of pills; mixing the arsenic, which, in Hindustanee, is sane hya, and in Arabic, shucc, with six times its weight of black pepper into a mass with a little water; so that each pill may contain about two thirds of a grain of arsenic and four grains of pepper, which is to be taken twice a-day. And this medicine is regarded almost as a specific antidote. It has no doubt proved often successful: and I have known various cases in our own country in which it has been found equally so in the form of the arsenical solution.

In India the metallic tonics, and especially arsenic.

Asclepias gigantea, Giant-swallow-wort.

In this quarter of the globe, however, Mr. Playfair has of late years revived the use of one of the species of asclepias or swallow-wort. In Europe, the a. *Vincetoxicum* was formerly in high favour as an alterant and alexipharmic, and was often denominated contrayerva Germanorum: but its virtues were not sufficient to support its character. The swallow-wort employed by Mr. Playfair is the a. *gigantea*, a native of the east, and appears, from an account lately published by Mr. Robinson,* to be possessed of more active and possibly more salutary, qualities. It is the *mudar* or *midaur* of Hindustan, a shrub not yet systematically arranged, but found on all the uncultivated plains of India, producing a milky juice, which is the part employed medicinally, not only in this complaint but in various herpetic affections, by being applied to the skin.†

Mudar of India.

* Medico-Chirurg. Trans. Vol. x.

† Miscellaneous Observations, &c. By Daniel Johnson, Esq., formerly Surgeon in the Hon. Company's Service.

GEN. VIII. SPEC. I. Elephantiasis Arabica. Arabian elephantiasis. Black leprosy. Treatment.

The tonic found most useful by Dr. T. Heberden in Madeira was bark, which, however, has not proved of equal success in other places or in the hands of other practitioners; but he employed it in connexion with that course of external stimulants which has been found generally serviceable, and probably not a little contributed to its wonderful efficacy in the various cases he refers to, and particularly one of a confirmed and chronic attack.

Bark in Madeira with external stimulants.

"I have," says he, "in this island experienced the use of the bark in four or five leprous patients with success. One had a confirmed elephantiasis; the others were only incipient; having no other symptoms than florid or livid tubercles in the face and in the limbs. The confirmed elephantiasis was attended with livid and scirrhous tubercles which had overspread the face and limbs; the whole body was emaciated; the eye-brows inflated; the hair of the eye-brows fallen off entirely; the bones of the nose depressed; the alæ nasi tumefied, as likewise the lobes of the ears; with a suffusion in both eyes which had almost deprived the patient of his sight. There was a want of sensation in the extremities; and a loss of motion in the fingers and toes."

Their success as related by Heberden.

For upwards of seven years Dr. Heberden had used every medicine he could think of to relieve this patient, but in vain. Antimonials and mercurials of almost every kind; neutral salts, the warm diaphoretics, as sassafras, and sarsaparilla, warm baths, and medicated baths, were alike fruitless. On May 2, 1758, he made his patient commence an electuary of powder of bark, with a third part bark of sassafras root, inspissated with syrup; and of this the quantity of a large nutmeg was ordered to be taken *twice* a-day. The patient at the same time had his arms and legs bathed with an embrocation, consisting of an ounce of lixivium of tartar and two drachms of spirit of sal ammoniac, intermixed with half a pint of proof spirit. By the latter end of May the tubercles were considerably softened; by June 28 they were dispersed; a

red scurfy efflorescence alone remaining behind, which in ten days lost its florid hue and peeled off, leaving the cuticle sound and clean. "The patient," says he, "gradually recovered the sensation in his legs and arms, and the use of his toes and fingers; the hair has grown again on his eye-brows; and the only remainder of the distemper which I can perceive is, that the nose continues somewhat flatter, from the depression of the bones. The suffusion is quite cured, and the patient is ευσαρκος και ευχροος,* of a healthy skin and colour.

GEN. VIII. SPEC. I. Elephantiasis Arabica. Arabian elephantiasis. Black leprosy. Treatment

* Med. Trans. ut suprà.

SPECIES II.

ELEPHANTIASIS ITALICA.

Italian Elephantiasis.

TUBERCLES CHIEFLY ON THE BODY AND LIMBS, SOMETIMES DESQUAMMATING: GREAT TENSION OF THE SKIN: VERTIGO: BURNING, LANCINATING PAIN IN THE HEAD: MELANCHOLY, AT FIRST REMITTING, AFTERWARDS FIXT, TERMINATING IN ALIENATION OF MIND: HEREDITARY.

GEN. VIII. SPEC. II. Called pellagra in Italy. General history.

For a knowledge of this species we are almost exclusively indebted to the Italian physicians, who have generally given it the name of pellagra or pelagra. The first writer upon the subject appears to have been Francis Frapolli, a physician of Milan, whose work, "In morbum vulgo Pelagram dictum," was published at Milan in 1771, and who expresses himself doubtful whether the disease, though not antecedently described, is not referred to occasionally by earlier writers, although he does not think that the pilarella, as the syphilis was called when it proved depilatory to the chin and eye-brows, was the disease in question, notwithstanding this seems to have been an extensive opinion at the time. The next tract of any note upon the subject was published at Venice in 1784, by G. M. d'Oleggio, under the title of "A Theoretical and Practical Treatise on the Diseases of Vernal Insolation, commonly called Pellagra."* But the best account we

* Tratto teoretico-pratico delle malattie dell insolato di primavera volgarimente dette della Pellagra.

have received of this complaint is from the pen of Dr. Jansen of Leyden, which appeared in 1788, and asserts that it is endemic in the Milanese territory.* It is, in truth, common to both the Milanese and Venetian territories, as well as to other districts widely differing in soil and temperature: and can scarcely therefore be referred to either of these sources. There is little doubt of its being hereditary, but not contagious; and it does not seem to have existed earlier than the middle of the last century.† It is commonly ascribed, as we have observed above, to the heat of the sun's rays‡ after the chill of winter, and is hence called *mal del sole*, which we have just seen was the view taken of it by d'Oleggio; while by Odoardo it is attributed to a scrophulous habit,§ and by Videmari and others, who have too much limited themselves to the nature of the eruption, to an impetiginous impurity.‖ But none of these explanations seem to rest on any very solid foundation; and, upon the whole, we have more reason for regarding it as produced by the debilitating causes of hot, confined air, want of cleanliness and bad diet, operating in many cases upon a diathesis hereditarily tainted. It is found chiefly among the Milanese and Venetian peasantry, whose hovels are full of wretchedness, and rarely makes its appearance till after the age of puberty. Alibert, in his "Diseases of the Skin," has denominated it, but with little accuracy, Ichthyosis Pellagra.¶

GEN. VIII. SPEC. II. Elephantiasis Italica. Italian elephantiasis.

The first symptoms of the disease are general languor, Description.

* De Pelagra morbo in Mediolanensi Ducatu endemio.

† Paralleli fra la Pellagra ed ulcuna malathie, che piu lo rassomigliano, del F. Fanzago. Padova, 1792.

‡ J. P. Frank, De Cur. Hom. Morb. Epit. Tom. IV. p. 43. Mannh. 8vo. 1792.

§ D'una spezia particolare di Scorbuto. Venet. 1776.

‖ Da quadam Impetiginis specie, morbo apud nos in rusticis nunc frequentiori, vulgo Pellagra nuncupata, 8vo. 1790.

¶ Description des Maladies de la Peau, p. 175.

GEN. VIII. SPEC. II. Elephantiasis Italica. Italian elephantiasis.

listlessness, gloom, feebleness, and stupor in the legs, and hence unsteady walking, vertigo, and confusion of ideas. Domeier, another writer upon the subject, extends the stupor of the legs to the entire frame, and asserts that anæsthesia is a characteristic symptom of this species.* But this assertion is not confirmed by the history of other pathologists, though the languor and inertness is often very great as well as universal.

First stage.

These symptoms usually take place in the spring; and as the summer approaches, a sense of tension, burning, and itching is felt in every external organ except the head, followed by an eruption of rosy papulæ, scattered over the skin generally, which terminate in tubercles of a shining red colour. After some days the tubercles desquammate, and the skin appears at first red, but soon recovers its natural colour. As the summer, however, advances, every symptom commonly subsides, and the strength is renewed with the winter; but the symptoms return with increased violence with the return of the spring, and this for several years in succession. But if the symptoms do not thus subside, they soon become even on the first attack considerably exasperated, and form a second stage of the disease, in which the itching grows more pungent; the heat more fiery; the skin harder, cracked, and chapped; the debility is greater; the mental functions are disturbed generally; the appetite is irregular; the sleep broken with acute pain in the head and spine, soon followed by delirium. The cutaneous affection now diminishes, but the nervous symptoms are greatly augmented. The vertigo increases; the patient is sad and loves solitude, and melancholy delirium alternates with furious mania. The tædium vitæ is insupportable, and self-murder is a frequent consequence. Strambi remarks that those who labour under this disease have the greatest tendency to drown themselves, "as by an hallucination," says he, "oppo-

Second stage.

Termination.

* Baldinger, Journ. XXVI. p. 9.

site to that of hydrophobia."* Coercion is at last necessary; and a diarrhœa, atrophy, or dropsy, closes the dreadful scene, if the patient do not sink earlier from corporeal and mental exhaustion. Dr. Holland tells us that at one time in the lunatic hospital at Milan, of five hundred patients more than one-third were *Pellagrosi*;† and he also informs us that morbid dissections have thrown little light on the pathology of this disease; that the visceral organs have at times evinced indurations and enlargements, but by no means constantly, and rather as effects than causes of the disease.

GEN. VIII. SPEC. II. Elephantiasis Italica. Italian elephantiasis.

The treatment needs not essentially differ from that of the preceding species. Pure air, habitual cleanliness, warm bathing, and a nutritious diet, with such tonics, whether vegetable or mineral, as best agree with the constitution, have proved most successful where the disease has not advanced beyond the reach of recovery. The lichen Islandicus is one of the most popular remedies.

Medical treatment.

* De Pellagra, Observationes. Ann. I. II. III. Mediol. 1785.

† Medico-Chir. Trans. Vol. VIII. Part. ii.

SPECIES III.

ELEPHANTIASIS ASTURIENSIS.

Asturian Elephantiasis.

TUBERCLES CHIEFLY ON THE HANDS AND FEET; CRUSTACEOUS, DESQUAMMATING; CONTINUAL TREMOR OF THE HEAD AND UPPER PART OF THE TRUNK; BALDNESS OF THE SCALP, AS WELL AS OF OTHER PARTS: GLOOM AND TERROR OF MIND.

GEN. VIII. SPEC. III.

How distinguished from both the preceding species.

THIS species agrees in many of its symptoms with the Italic, and it is only worth while to notice the points in which they differ. Upon the whole, we may observe that all the species coincide in being founded on an exhausted constitution, in the general character of the tubercles and in their fatal termination by dropsy, atrophy, or some other asthenic disease. The Arabian species attacks the face, the roots of the hair, and the palate-bones before the remaining parts on which it preys are diseased, and the affection of the skin increases with the increase of the other symptoms. In the Italian species, the affection of the skin diminishes as the nervous and mental commotion augments. The pellagra also is distinguished by thick urine, double vision, and a peculiar mouldy smell of the sweat.

Description.

In the Asturian species, the crustaceous tubercles are peculiarly painful, highly fetid, deeper furrowed with cracks, and more disgusting to the sight; attacking the head as well as other parts indiscriminately, and destroying the roots of the hair. The mind is less affected than in the last, and with melancholy and terror rather than with raving delirium.

GEN. VIII. SPEC. III. Elephantiasis asturiensis. Asturian elephantiasis.

This species constitutes the Asturian leprosy of Thiery, Vandermonde, and Sauvages; but genuine leprosy is rarely a constitutional complaint; and the present is its proper place. As the tubercles desquammate, the skin appears of a glossy leprous red, and the disease is hence called by the Spaniards Mal de la Rosa.

Forms the Asturian leprosy of Thiery and others; and the Mal de la Rosa of the Spanish writers.

The causes are extreme poverty and its attendants, filth, bad diet, and crowded unventilated rooms in the deep and swampy valleys of the country, almost impervious to the rays of the sun; and hence the medical treatment and general regimen recommended under the preceding species will afford the fairest promise of success here.

GENUS IX.

CATACAUSIS.

Catacausis.

GENERAL COMBUSTIBILITY OF THE BODY.

GEN. IX. THE peculiar state of the constitution which lays a foundation for the present genus of morbid affections is of a very singular and mysterious kind; and the only medical work that has referred to it in our own country, antecedently to the author's own system of Nosology, is Dr. Young's Medical Literature, in which it is noticed under the Greek name here applied to it, derived from καταχαιω "exuro." One only species has hitherto been discovered as belonging to it; which, from the peculiar habit under which it occurs, may be distinguished by the name of

Rarely noticed by medical writers hitherto.

Only one known species.

1. CATACAUSIS EBRIOSA. INEBRIATE CATACAUSIS.

SPECIES I.

CATACAUSIS EBRIOSA.

Inebriate Catacausis.

THE CONSTITUTION INFLAMMABLE IN CONSEQUENCE OF A LONG AND IMMODERATE USE OF SPIRITUOUS LIQUORS: THE COMBUSTION EASILY EXCITED OR SPONTANEOUS.

GEN. IX. SPEC. I.

The art of medicine seldom available.

Disease not credible if it were not well authenticated

IN this wonderful malady the art of medicine can be rarely of any avail; since the mischief is, in almost all instances, only to be discovered after a cessation of life, and the destruction of some part of the body by an actual flame, or fire, in many instances spontaneously issuing from its surface. There may be some difficulty in giving credit to so marvellous a diathesis; yet examples of its existence and of its leading to a migratory and fatal combustion are so numerous and so well authenticated, and press upon us from so many different countries and eras, that it would be absurd to withhold our assent. In almost every instance, the combustion seems to have taken place in females, advanced in life, and immoderately addicted to spirituous liquors.* In some cases the heat that has set them on fire appears to have originated in themselves; in others to have been communicated by a stove, or a candle, or a stroke of lightning;† but in no case has the fire or flame hereby excited in the body been

General description

* Bartholin, Act. Hafn. I. Obs. 118.

† Fouquet, Journ. de Med. Tom. LXVIII.

GEN. IX. SPEC. I. Catacausis ebriosa. Inebriate catacausis.

so powerful as essentially to injure the most combustible substances immediately adjoining it, as linen or woollen furniture. The body, in several instances, has been found actually burning, sometimes with an open flame flickering over it; and sometimes with a smothered heat or fire without any open flame whatever: while the application of water has occasionally seemed rather to quicken than impede the igneous progress.

This is the more extraordinary, as the human body, in every other state we are acquainted with, whether of health or disease, is scarcely at all combustible of itself, and cannot be reduced to ashes without the assistance of a very large pile of fagots or other fuel, as universal experience in this very ancient mode of sepulture, and the history of martyrs, who have been condemned to the flames, abundantly testify.

Usually occurs at night.

The event has usually taken place at night when the sufferer has been alone; and has commonly been discovered by the fetid, penetrating scent of sooty films which have spread to a considerable distance; the unhappy subject has, in every instance, been found dead, and more or less completely burnt up; the burnt parts being reduced to an oily, crumbly, sooty, and extremely offensive matter. "I confess," says M. Pierre-Aime-Lair,* "that these accounts at first appeared to me to be worthy of very little credit, but they are presented to the public as true by men whose veracity is unquestionable. Bianchini, Maffei, Rollin, Le Cat, Vicq d'Azyr, and other men distinguished by their learning, have offered certain testimony of the facts. Besides it is not more surprising to meet with such incineration than a discharge of saccharine urine, or an appearance of the bones softened to a state of jelly."

How discovered.

The affected person found dead.

Authorities appealed to.

Those who are desirous of pursuing this curious subject farther, and of entertaining themselves with the very extraordinary histories connected with it, as also of ex-

* Journ. de Physique, Ann. VIII

amining the various hypotheses by which they have been accounted for, may consult the Philosophical Transactions,* which contains numerous examples; as also a variety of foreign journals of established reputation, referred to, and cited in the running commentary to the author's volume of Nosology.† We have not space to enter into these separate cases, though many of them are highly interesting; but in a general course of medical study, the phænomenon ought not to be passed by: it forms one of the most curious links in the long chain of morbid affections, and equally demands our attention as pathologists and physiologists.

GEN. IX. SPEC. I. Catacausis ebriosa. Inebriate catacausis.

Subject ought not to be omitted in a course of medical study.

* See especially Vols. XLIII, XLIV.

† Ploucquet, Literat. Med.—Dupont, De Corporis Hum. Incendiis Spontaneis.

GENUS X.

PORPHYRA.

Scurvy.

LIVID SPOTS ON THE SKIN FROM EXTRAVASATED BLOOD; LANGUOR AND LOSS OF MUSCULAR STRENGTH; PAINS IN THE LIMBS.

GEN. X. Signification of the generic term; and reasons for its adoption.

PORPHYRA is in Greek what purpura is in Latin, literally "the purple or livid disease." The latter has been very generally made use of; but the former is here preferred on two accounts. First, that of technological simplicity,—the names of the genera under the present system being uniformly of Greek origin. And secondly, because the Latin purpura has been used in senses so numerous, so vague, and unconnected, that at this moment it conveys no definite idea whatever. "The term purpura," observes Dr. Bateman, most correctly, "has been employed by different writers in so many acceptations that some ambiguity would perhaps have been avoided by discarding it altogether; for some authors have used it as an appellation for measles, others for scarlet-fever, for miliaria, strophulus, lichen, nettle-rash, and the petecchiæ of malignant fevers; while formerly it was applied to petecchial spots only by Riverius, Diemerbroeck, Sauvages, Casson, and some others."*

The Latin term purpura used indefinitely.

Ordinary term scorbutus. Objections to its use.

The usual synonym for purpura is *scorbutus;* but to this there are still stronger objections. For as a term it is neither Greek nor Latin, nor any language whatever; but

* Synops. of Diseases, p. 102

GEN. X. Porphyra. Scurvy.

an intolerable barbarism, derived, as is commonly supposed, from the German compound *schar-bocke* literally "aggregate-pox," "cluster-pox;" but more likely from *scharf-pocke*, "violent," or "vehement pox;" or *schorf-pocke*, "scurf," or "scurvy-pox," to which the inventor has endeavoured to give a sort of Latin termination. Independently of which, scorbutus, as employed at present, only indicates a particular species of scurvy; and could not therefore, without imprecision, be used in a generic signification.

The definition offered nearly parallel with the purpura of Willan.

The sense here expressed by porphyra, runs, as nearly as possible, parallel with the range assigned by Dr. Willan to purpura. "With Riverius and some other authors," says he, "I propose to express by the term *purpura* an efflorescence consisting of some distinct, purple specks and patches, attended with general debility, but not always with fever." And again "cases of the purpura seem to have been studiously multiplied in periodical publications, and in medical or surgical miscellanies. I consider it under all the forms described as pertaining to the scurvy, though it is *not always* attended with sponginess of the gums, and a discharge of blood from them according to the definition of scorbutus in nosology."*

Its range more fully stated.

Porphyra, in its present signification, is intended to include every description of petecchial eruption, and spontaneous ecchymosis not dependent on fever as their cause, in which case these affections are only symptomatic.

The genus thus explained will associate under its banners the three following species:

1.	PORPHYRA SIMPLEX.	PETECCHIAL-SCURVY.
2.	——— HÆMORRHAGICA.	LAND-SCURVY.
3.	——— NAUTICA.	SEA-SCURVY.

* On Cutaneous Diseases, Ord. III. p. 453.

SPECIES I.

PORPHYRA SIMPLEX.

Petecchial Scurvy.

SPOTS NUMEROUS, BUT SMALL AND FLEA-BITE-SHAPED; CHIEFLY IN THE BREAST, ARMS AND LEGS; PALENESS OF VISAGE.

GEN. X. SPEC. I.

Formerly supposed to originate alone from putrid fevers, till other causes were shown by Riverius.

PULICOSE or petecchial spots were at one time supposed to be, in every instance, the result of debilitating and putrid fever. Riverius is, perhaps, the earliest author who distinguishes between simple petecchiæ, and petecchial fevers. Vascular debility or relaxation is, however, the predisposing cause in both cases.* They necessarily, indeed, accompany each other, and, wherever they exist in any considerable degree, they lay a foundation for those minute extravasations which constitute the present species; and which may take place either from occasional ruptures of the weakened coats of the minute subcutaneous blood-vessels, in consequence of their being incapable of resisting the impetus of the blood that flows through them; or from the mouths of many of them, which should give forth only the finer and limpid particles of the blood, yielding and allowing an exit to the red globules.

In all cases debility and relaxation the predisposing cause.

Usual remote causes.

Both these may follow upon atonic fevers; but the usual remote causes in the species before us, are severe labour with innutritious or spare diet, and especially with impure air; an impoverished state of the system from a

* Plumbe, Practical Treatise on the Diseases of the Skin, p. 109, 8vo. 1824.

sudden and profuse loss of blood; a sedentary and inactive life, or some chronic and exhausting disease by which the general strength has been broken down. To these Riverius adds suppression of the catamenia, and a certain mild ebulliency of the blood in boyhood—levem quandam sanguinis ebullitionem; a phrase apparently importing an excess of sanguineous temperament: from both which he tells us he has frequently seen the disorder originate. And he is confirmed in the last by a case hinted at by Dr. Perceval in his manuscript comment on the author's Nosology, in which he observes, under the present species, that "in a young lady of a full habit, and florid complexion, if the skin of the face or neck were touched even slightly blood oozed from the pores."

GEN. X. SPEC. I. Porphyra simplex. Petecchial scurvy.

The disease seems also to be produced at times by some unknown cause; of which Cullen has given a striking instance in his Materia Medica. "The patient," says he, "was a woman who had lived very constantly upon vegetable aliment and had not been exposed, so far as could be judged, to any febrile or putrid contagion; and yet, without any feeling of any other disorder, was affected with numerous petecchiæ over the whole surface of her body. After these had continued for some days without any symptoms of fever, she was affected with swelled and bleeding gums, with fetid breath and much thirst; and in the course of a week or two more almost every symptom of a putrid fever came on, and in a few days proved fatal."

Remote cause sometimes unknown. Illustrated.

It is possible in this case that the brain may have lost its energy, and the blood become impoverished by too low a diet, though the history is not given with sufficient fulness to speak with much decision upon this point. The fever was evidently produced by the irritability of weakness, and necessarily ran into a typhous type from the same cause.

The above case probably referable to debility.

The disease, as it commonly shows itself, appears under two forms, which may thus be described as varieties.

GEN. X. SPEC. I. Porphyra simplex. Petecchial scurvy.

α	Pulicosa. Simple Pulicose Scurvy.	Exhibiting from the first a pulicose, or flea-bite appearance.
β	Urticaria. Nettle-wheal Scurvy.	The flea-bite spots preceded by reddish, rounded and nettle-sting wheals, but without the nettle-sting itching; fugacious and migratory.

α P. Pulicosa. Simple pulicose scurvy.

The FIRST VARIETY is not only produced by debility, but attended with languor and pains in the limbs, and chiefly affects women and children in consequence of their greater laxity of fibre.

β P. Urticaria. Nettle-wheal scurvy.

The SECOND VARIETY may possibly be accompanied with some kind of acrimony in the blood, and something more of a constitutional affection; for there is usually a loss of appetite, and an edematous swelling of the hands and ankles; while the spots are brighter at night and darker in the day; evidently proving great irritability in the capillaries, and especially towards the period of the natural evening paroxysm of fever, and great atony in the absorbents. This variety often continues for five or six weeks.

Medical treatment.

Better diet, freedom from hard labour, pure air, sea-bathing, the mineral acids, and other tonic medicines, afford a pretty certain process of cure.

SPECIES II.

PORPHYRA HÆMORRHAGICA.

Land-Scurvy.

SPOTS CIRCULAR, OF DIFFERENT SIZES; OFTEN IN STRIPES OR PATCHES, IRREGULARLY SCATTERED OVER THE THIGHS, ARMS AND TRUNK; OCCASIONAL HEMORRHAGE FROM THE MOUTH, NOSTRILS OR VISCERA; GREAT DEBILITY AND DEPRESSION OF SPIRITS.

GEN. X. SPEC. II.

THIS species, the morbus maculosus Werlhofii of the German writers,* is sometimes marked by febrile paroxysms, with variable intervals, but usually occurring in the evening. It has no regular or stated termination. Dr. Willan has found it run on in different cases, from fourteen days to a twelvemonth, and upwards. It is met with at every period of life, but chiefly affects persons of a weak and delicate habit; often children, principally women.

General description.

Precursive symptoms.

The precursive symptoms are lassitude, faintness, and pains in the limbs, so that business or even company, is found fatiguing. After this there are often shiverings, nausea and vomiting. The purple eruption, for the most part, appears first on the legs, and afterwards at irregular periods, on the thighs, arms, and trunk of the body; the hands and face generally remaining free. The spots, however, are frequent on the interior of the mouth, and

Diagnostics.

* Geschischte eines glüchlich geheilten Morbus Maculosus Werlhofii, von Dr. Marquett, &c. Magdeburg.

GEN. X. SPEC. II. Porphyra hæmorrhagica. Land-scurvy.

particularly the tonsils, gums and lips: where they are sometimes raised or papulated. It is here the first hemorrhage commonly issues, though, as the disease advances, blood flows also from the nostrils, lungs, stomach, intestines, and uterus: all which organs, together with the heart, are sometimes found studded with spots on their surface, on examination after death.* The hemorrhage is often profuse and cannot easily be restrained, and is accompanied with anasarcous swellings. It sometimes precedes the purple spots, but more commonly takes place a few days afterwards. It is this rapid erosion, or ulceration of the blood-vessels, and consequent discharge of blood, often accompanied with diarrhœa or dysentery, where the intestines associate in the complaint, by which land-scurvy is chiefly distinguished from sea-scurvy, and acquires the distinctive name of *hemorrhagic;* since, though these symptoms may also occur in the latter, they do so rarely, except in the last stage of the complaint.

Remote causes.

The most usual remote causes of the present, as of the preceding species, are poor diet, impure air, anxiety of mind, and a sedentary mode of life: and if women under these circumstances, and affected with this complaint, be wet nurses, their infants participate in the disease from the milk not being sufficiently nutritious. It is also produced by habitual gluttony, and particularly by an habitual and immoderate use of spirits; which have the strongest tendency to render torpid the collatitious organs of digestion, and especially the liver; whence congestions and other obstructions, and whence, too, the larger and more dangerous hemorrhages that occur in this species.

Medical treatment must differ according to the difference of cause.

As these causes are widely different in their mode of action, though they concur in producing the same effects, the treatment must vary in like manner.

Where a tonic plan

Where the source of the disease is poverty, with its miserable train of attendants, poor diet, impure air, hard

* Edin. Med. and Surg. Journ. July 1822.

labour, grief of mind, the mode of cure recommended for the preceding species will be found equally serviceable here: but the tonic and stimulant power may be carried to a higher range; the bark should be freely administered, wine be liberally allowed, and lemons, or citric acid in any other form, be used to an extent of three or four ounces of lemon-juice daily; which, however, is the smallest quantity from which any essential benefit may be expected. Of all the antiscorbutics this is by far the most effectual; and by some writers is regarded as a specific. And as the weak action of the vessels is extreme, the terebinthinate stimulants, as camphor and the rectified oil of turpentine, are often peculiarly advantageous. The last has been strongly and judiciously recommended by Dr. Whitlock Nichol; and other practitioners have fully confirmed his views.

GEN. X. SPEC. II. Porphyra hæmorrhagica. Land-scurvy.

adviseable from the first.

Importance of citric acid, or lemon-juice.

Essential oil of turpentine.

The worst symptom is the tendency to hemorrhage, which is sometimes profuse, and restrained with great difficulty, and has been known to prove fatal. Occasionally, however, an accidental hemorrhage has had a contrary effect, and carried the complaint away; and hence Dr. Parry of Bath has found venesection serviceable. Yet in these cases, we may reasonably suspect the second cause we have noticed, namely, some visceral congestion, and especially that of the liver, to lie at the foundation; and dissections have proved this to be no uncommon cause of the disorder.* The symptoms of visceral obstruction indeed, are often sufficiently clear; and where these occur, antecedently to the tonic plan, we must freely and repeated evacuate the bowels; and may advantageously have recourse to the lancet: and the more so, as this form of the disease is sometimes accompanied with inflammatory action, and is chiefly what is referred to by Dr. Stoker under the name of dynamic purpura.†

When to be preceded by evacuants.

* Plumbe on Diseases of the Skin, p. 109. 8vo. 1824.

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Sometimes cured by a metastasis.

Strikingly illustrated.

In some cases of great laxity of fibre, the extremities of the larger capillary arteries seem to sympathize with the state of the liver or other visceral organs, and to relieve the oppression by a metastasis. Willan has related a singular case of this disease which it is difficult to account for otherwise. A lady aged thirty-six, of the sanguine temperament, after experiencing, for several days, a painful inflation of the stomach, was seized on the 17th of June, 1792, with violent vomiting, which continued almost incessantly through the 18th and 19th, and was accompanied with excruciating pains in the bowels. The fluid discharged was clear, strongly tinged with green bile, and amounted to three or four quarts a-day. The vomiting abated about the 20th, and she had loose stools of a green colour intermixed with black coagulated blood. This kind of discharge continued till the 25th, producing great languor and faintness, thirst and restlessness, with a cool skin and remarkably slow pulse. On the evening of the 25th, her extremities became suddenly cold, the pulse scarcely discernible, a cold sweat trickled from every part of the body, her voice was indistinct, and her breathing laborious. From this alarming state she recovered in the course of the night; and on the following day a rash appeared over the whole body in small and circular patches, confluent on the neck, shoulders and nates, but in other places distinct. The eruption diminished in two or three days, and assumed a livid colour; and the discharge of blood ceased from this time. She improved generally, but for two months suffered greatly from languor and debility: the extremities were, for a long time, anasarcous, and two of the spots became gangrenous. In the Transactions of the Medico-Chirurgical Society of Edinburgh, is a brief history of a case that proved fatal in less than forty-eight hours. The patient was a strumous child; and considerable congestion was found in the brain.*

* Vol. I. p. 680.

The account and causes now given of this species are such as we usually meet with in the present day. But if we look back into the history of this disease as far as the seventeenth century, and especially to the state of this metropolis, we shall find hemorrhagic or land-scurvy making a much nearer approach to sea-scurvy than in our own time: not only in its symptoms, but from the peculiar causes that seem to have given rise to it, and which are now, for the most part, removed. The population within the walls of the old city, was, at that period, far greater than at present, since the streets have been very extensively widened, and many of them, entirely pulled down; and fashion, which does not always operate so usefully, has led all who are capable of following its steps, into the more salubrious air of the neighbouring villages. Independently of this, the supply of fresh vegetable food for man, and of winter-fodder for cattle, was at the period before us, so scanty, as to render it necessary to salt a great quantity of the cattle that was killed in the summer season for winter's use. To which we have to add a far greater degree of dampness and uncleanness, not only in the public streets but also in private houses.

GEN. X. SPEC. II. Porphyra hæmorrhagica. Land-scurvy.

Land-scurvy more frequent and severe formerly than at present.

Explanation of this assertion.

Unventilated atmosphere.

Want of fresh vegetable food.

All these are also causes of sea-scurvy; and we find from the description of Willis and others, that they produced conjointly very similar effects; and that the mortality hence ensuing was very great. The monthly deaths, according to the bills of mortality, occasioned by what is there called scurvy, were seldom less than fifty, and frequently as high as ninety. In the period of the plague, they are only set down at a hundred and five from this last cause for the year. It was not, indeed, till the beginning of the sixteenth century that any great progress was made in the art of kitchen-gardening in our own country. At this last period, so low was the knowledge of this art, that Queen Catharine of Arragon could not procure a salad till a gardner was sent for from the Netherlands to raise it: nor were the most common ar-

Hence land-scurvy of former times related to sea-scurvy.

Kitchen gardening little cultivated till

GEN. X. SPEC. II. Porphyra Hæmorrhagica. Land-scurvy.

ticles of the kitchen-garden, such as cabbages, cultivated till this reign.* And such was the prejudice at one time entertained against pit-coal, from its being supposed to load the atmosphere with unhealthy fumes, but which is now become one of our most powerful ventilators, and consequently one of our most active agents in promoting the general health of the city, that a law was formerly in existence which made it a capital offence to burn it within the city walls; so that it was only allowed to be used in the forges of the environs. Sir Gilbert Blane informs us that the late Mr. Astle, keeper of the records in the Tower, told him that he had there discovered a document importing that under the operation of this law a person had been tried, convicted, and executed for this offence in the reign of Edward the First.—We learn also from Davenant,† that heaps of the most noisome filth were suffered to accumulate in consequence of the imperfection of the public sewers; and that particular places were marked out and assigned for such accumulations, which were called lay-stalls; and hence the name of Lay-stall street, which exists in one or two parts of the metropolis even in the present day.

the sixteenth century. Singular proof of this.

Burning pit-coal esteemed poisonous:

and punished with death.

Public sewers deficient or wanting.

Lay-stalls common.

The same happy causes, therefore, which have delivered us so generally from dysentery, remittent fevers, and even the plague itself, have freed us also from land-scurvy. And it has operated over all the other large cities of England as well as over the metropolis: and over the open country as well as over the towns. Even the remote districts of Somersetshire, not more than a century ago, formed a striking theatre for the exhibition of this tremendous scourge, as we learn from Dr. Musgrave's work,‡ published in the year 1703. "Agri Somersetensis, uliginosi magnâ parte et depressi, aërem

Cause of the diminution of land-scurvy operative upon other diseases, and other districts.

* Anderson's History of Commerce.—Sir G. Blane's article, Med.-Chir. Trans. IV. p. 96.

† Page 351. ed. 1673.

‡ De Arthritide Symptomatica.

crassum et humidum trahentes, incolæ, maculis subnigris, ulceribus malignis, crurum dolore, respiratione difficili, lassitudine spontaneâ, nervorum debilitate, hydrope, gangrænâ, et istiusmodi aliis SCORBUTI exquisiti signis CREBERRIME divexantur." GEN. X. SPEC. II. Porphyra hæmorrhagica. Land-scurvy.

The picture is strongly and fearfully sketched, and precisely corresponds with the definition just offered. How then comes the country, as well as the town, to be so wonderfully and beneficially changed in our own day? "The same spirit of improvement," says an admirable writer,* from whom I have often had occasion to quote, and whose words I would always give rather than my own, "which has constructed our sewers, and widened our streets, and removed the nuisances with which they abounded, and dispersed the inhabitants over a larger surface, and taught them to love airy apartments, and frequent changes of linen, has spread itself likewise into the country; where it has drained the marshes, cultivated the wastes, enclosed the commons, enlarged the farm-houses, and established cottages. Few, perhaps, even among physicians, are aware of the extensive influence of these measures. Few have adverted with the attention it deserves to the prodigious mortality occasioned formerly by annual returns of epidemical fevers, of bowel-complaints, and other consequences of poor and sordid living to which we are now entire strangers." Explained more at large; from remarks of Heberden.

In consequence of this extraordinary improvement in the best branch of physical philosophy, the same attentive pathologist tells us, that "For ten years, during which time he was one of the physicians to St. George's Hospital, the cases of genuine scurvy that were brought into this establishment and fell under his care did not amount to more than four;—not one of which was severe. In St. Bartholomew's Hospital, however, about the year 1795, owing to the very great severity of the Hence the disease now rarely found in the public infirmaries.

* Dr. Heberden, Med. Trans. Vol. IV. Art. VII.

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preceding winter, various poor patients were received with all the characters of true porphyry; which, in one man, were carried to such a height that he died in a most offensive state the day after he was admitted."

But has lately appeared in the Milbank Penitentiary.

We have lately, however, and to the astonishment of every one, witnessed a most severe and even fatal renewal of this disease in the Penitentiary prison for convicts, established on the side of the Thames at Milbank: and this to such an extent, that at one time there were not fewer than about four-hundred and fifty on the sick list, out of a prison-population of about eight hundred and fifty,* chiefly labouring under dysentery or diarrhœa from the effects of the disease on the stomach and intestines, which, on post-obit examinations, were generally found to be pulicose or ulcerated in various parts; the complaint being at length apparently propagated by contagion.

The cause of this disease has hitherto been involved in much doubt. The prison was throughout ascertained to be cleanly and, for the most part, well warmed, the cells lofty and unobjectionable, and the courts airy and paved with flag-stone. The original soil was swampy; but it is generally believed at present to be free from damp in consequence of the enormous expense of draining and other means of exsiccation that have been bestowed upon it: and the surrounding neighbourhood is undoubtedly healthy. It was at first mainly attributed to a reduced scale of diet, and particularly of animal food, which had been suddenly laid down for the prison: but a return to a richer scale produced no advantage; and was accompanied with an extension rather than a diminution of the diarrhœa or dysenteric form of the disease. So that at the end of six months, after every remedial plan which the physicians to the establishment could devise in succession, that of mercury being the chief, at first given in small and alterant doses, and afterwards

* Report of a Select Committee of the House of Commons, 1823, p. 242.

more freely and for the express purpose of producing salivation, the whole prison population, as well male as female, was removed from the Penitentiary, and transferred to the hulks at Woolwich.

The real cause of this mischief has hitherto puzzled the ablest and most acute physiologists, and is supposed to bid defiance to all conjecture.* Yet I think it is by no means impossible to follow it up, and drag it from its obscurity.

In a population so large as that we are now considering, it is not enough that the courts should be airy, and the air not manifestly loaded with moisture; but it is equally necessary that such air should be free from confinement; that it should be in a constant state of perflation, and refreshed and purified by renewal: for without this, large as the courts are, the air they contain must equally be drained of its vivifying power, and tainted with the azotic vapour that every individual is perpetually pouring forth from his skin and his lungs: and consequently must tend, in a greater or less degree, to a generation of the disease before us, or rather to all those morbid effects which the Milbank Penitentiary has so strikingly unfolded.

Now it appears to me almost impossible to take a survey of this prison without coming to an admission that it is, with respect to ventilation, in the very condition just described. The inhabitants of the neighbourhood are healthy, because, notwithstanding the lowness and original swampiness of the ground-soil, and its exposure to exhalations, the fanning breezes which are daily playing around them carry off the rising moisture, and supply them with a perpetual current of pure air. But the height of the terminal and intersecting walls of the prison, with only a few small openings for doors, and no opposite outlets, effectually prevent this within its limits. Air will

* An Account of the Disease lately prevalent at the General Penitentiary. By P. M. Latham, M.D. &c. p. 217. 8vo. 1825.

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here, indeed, find its way as it will every where else, unless opposed by an hermetical seal, but as soon as it enters the courts of the Penitentiary, it is almost as much imprisoned as the convicts themselves: it is in a considerable degree bottled up; and the only change it can undergo is that of parting with its vivifying principle, and receiving a mischievous principle in return. Were it indeed entirely bottled up in the manner here spoken of, the result would be obvious instantaneously: but this is not the case, for a part of it must necessarily fly off in consequence of its higher temperature, and greater specific levity, and its place be supplied with air from without. But the supply does not seem to be in proportion to the demand; the balance is not duly preserved, and the expired and tainted air is not sufficiently carried off. It is very possible also that some degree of humidity, though not manifest to the senses, is perpetually ascending from the low and once swampy soil beneath, which should be swept away by the winnow of a stirring breeze. But this is not necessary. It must be obvious to every one that where a large population is immured in a boundary of any extent, if the supply of pure air be in the least degree below the supply of foul air, the health of such population must be encroached upon: and that the less the difference, the more insidious the effect, because the more invisible. It is, however, an effect that must go on: its influence must at length become obvious, and challenge attention; and the result, as already observed, must be, if I mistake not, a combination of symptoms more or less approaching to those which have of late been exhibited at the Penitentiary before us.

If the real cause be thus correctly traced out, the remedy will not be difficult in the hands of an able pathologist, and a *skilful architect*.

SPECIES III.

PORPHYRA NAUTICA.

Sea-Scurvy.

SPOTS OF DIFFERENT HUES INTERMIXED WITH LIVID, PRINCIPALLY AT THE ROOTS OF THE HAIR; TEETH LOOSE; GUMS SPONGY AND BLEEDING; BREATH FETID; DEBILITY UNIVERSAL AND EXTREME.

GEN. X. SPEC. III.

Why denominated sea-scurvy.

THIS species is denominated SEA-SCURVY, not from its being exclusively limited to mariners and extensive fleets, but from its being most common to persons thus occupied, and raging in such situations with the most fatal havoc. For the peculiar, as well as the general, causes which produce it at sea may also operate on shore, and have at times operated with merciless ravage in besieged garrisons, and among armies reduced to short provisions, or of unwholesome kinds, and worn down by fatigue, anxiety, and exposure to a damp atmosphere. Such seems to have been the condition of the Roman army under the command of Germanicus as related by Pliny; whose account of the disease that preyed upon it, though vague and unsatisfactory, coincides with the general appearance of sea-scurvy. We have similar descriptions in several of the expeditions that took part in the Holy Wars, and particularly that of St. Lewis as related by Joinville. We may hence conclude that sea-scurvy is not a disease of recent times alone;* though it does not appear to have attracted

Has been found on land as well as at sea.

Sometimes in the Roman army:

and in the Holy wars.

Hence not a disease of recent origin, though not generally attended to till 1497, and afterwards.

* Compare Richter, Pr. Disquisitio in Hippocraticas Scorbuti antiquitates, &c.

GEN. X. SPEC. III. Porphyra nautica. Sea-scurvy.

any very general attention till the melancholy result of the famous voyage of Vasco de Gama in 1497. The spirit of maritime discovery was at this time in full vigour and activity: the Portuguese, the Spaniards, the Dutch, and the English vied with each other in their efforts to explore remote and unknown countries; the means of providing suitably for voyages of so great length were little understood; and hence the disease frequently made its appearance during the progress of the next half century and raged with tremendous violence. It is well known, indeed, that so late as 1741 the fleet under Captain, afterwards Lord Anson, lost half its crew in the space of six months from the time it left England.

Symptoms and general history.

Accession.

The diagnostics and progress of the disease are neatly and accurately concentrated by Dr. Parr. Its first appearance is evinced by a pale, bloated complexion, lassitude, and a disinclination to motion, with diminished energy in the muscular fibres: to which may be added some degree of stiffness or induration, and an intumescence of the lower limbs. If the gums, even in this early stage, be examined, they will be found spongy and apt to bleed on being touched; while the teeth are loosened in their sockets. The skin is sometimes rough, but more generally smooth and shining, covered with bluish or livid spots, which do not rise above it; and these spots often coalesce in large blotches, particularly in the legs

Progress.

and thighs. About the same period, old ulcers often break out again, and the slightest mercurial preparation quickly produces salivation. The ulcers discharge often a fetid sanies, or are covered with a coagulated crust which is renewed whenever it is separated. The edges are livid with irregular granulations, which sometimes run into a bloody fungus. During the whole of this period, the appetite continues good, and, though tensive pains arise and are necessarily distressing, yet, on the whole, the patient feels little inconvenience.

The state of the bowels is very various. The stools are often frequent and offensive, but there is sometimes an ob-

stinate costiveness. The urine is commonly high-coloured and fetid; the pulse feeble, but rarely quick. A weakness in the joints appears early, and increases with the disease; and a shrinking of the flexor muscles renders the limbs useless; producing the scorbutic paralysis of Dr. Lind. The calves of the legs fall away, with sometimes an irregular hardness, and at length become edematous, while the bones themselves, no longer supplied with a sufficiency of calcareous earth, give way at the callus of fractures; and those which have been formerly broken and re-united, become again separate at the line of re-union.*

GEN. X. SPEC. III. Porphyra nautica. Sea-scurvy

The last stage is truly distressing. Blood is frequently discharged from the intestines, bladder, and other organs. The slightest motion brings on faintness, and often immediate death. Catchings of the breath and syncope, slightly and occasionally, indeed, found earlier, are now frequent, and dangerous; yet the sense of weakness is so much less than its real amount, that the patient often attempts exertion, and dies in the very effort: though, more frequently, he survives the attempt for a short time, and especially when animated by any powerful and pleasant motive, as the hope of getting on shore, or even of engaging in fight with an enemy.

Final stage

The most obvious of the remote causes of sea-scurvy is salt provisions; and perhaps the most obvious of its proximate causes is a putrescent state of the blood: and hence these are the causes that have been commonly assigned from the time of Sir John Pringle to the present day. Dr. Cullen was so convinced of the active power of these two causes that he could hardly admit of the operation of any other. He supposes that the animal economy has a singular power of producing and evolving a saline matter from foods of every kind which does not naturally exist in them, but more especially from a diet that is wholly vegetable or wholly animal, though more so in the latter

Most obvious remote cause salt provisions.

Most obvious proximate cause putrescency of the blood.

The second how produced by the first as explained by Cullen.

* Aitken, Essays on several important subjects in Surgery, &c.

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case than in the former. And he supposes, next, that such saline matter is of an ammoniacal kind; and that whenever it is produced or evolved in too large a proportion, it has a tendency, like neutral salts applied to blood when drawn from the body, to dissolve the crasis of the animal fluids, and render them putrescent, though, in a living state, they hardly ever proceed to an actually putrid stage. And applying these general remarks to the disease before us, he supposes that "the throwing into the body along with the aliment an unusual quantity of salt," which, by the action of the body, he further conceives to be changed into ammonia, must have a great share in producing that preternaturally saline, and consequently dissolved, or putrescent state of the blood, which constitutes, in his view, the proximate cause of scurvy.*

In other places, indeed, Dr. Cullen supposes not merely that the introduction of an unusual quantity of salt into the blood may have a *great share* in producing sea-scurvy, but that it is probably its only cause. "Whether," says he, "it ever arises in any other circumstances is extremely doubtful; for there is hardly any instance of the disease appearing unless where salt meats had been employed, and scarcely an example where the long continued use of these did not produce it."†

Objection to this hypothesis.

The great stumbling block to this hypothesis is, that while the mineral acids, the most powerful antiseptics we are acquainted with, are of little or no avail, many of the plants most successful in curing the disease are those which are most alkalescent, and make the nearest approach to an ammoniacal property, as the alliaceous and tetradynamiæ.

Cullen's view too limited; as other causes co-operate, and sometimes without salt provisions.

This view is, therefore, too limited in every respect. That an excess of salt, and particularly of salted meat, is a powerful cause in the production of scurvy, is unquestionable; yet not more perhaps from its tendency to dissolve the fluids, for the blood retains a buffy crust even to the

* Pract. of Phys. §§ MDCCCXII. MDCCCXIII.

† Id. §§ MDCCCXII. MDCCCXIII.

last, than from its rendering the salted meat less nutritious. But it is by no means the only cause. In the preceding varieties, we have already seen it produced on land as well as at sea, and in some cases where there was no employment of salt provisions. And even sea-scurvy itself has occasionally been found to arise where the diet has by no means been saline; and in damp situations, whatever have been the diet, unless where peculiarly generous and stimulating: and we have one instance of its having occurred in a young woman who had subsisted almost wholly on tea.

GEN. X. SPEC. III. Porphyra nautica. Sea-scurvy

In like manner, though the fluids of the body are loose and incoagulable, the muscular fibres are equally loose and incontractile; so that the latter, as justly observed by that excellent practical writer Dr. James Lind,* are as much affected as the former: and, if we attend to the course of the symptoms as they arise, we shall find that they are affected soonest; for the earliest signs of the disease are those of languor, debility, and dejection; though, upon the whole, the mental depression is less considerable than in land-scurvy; and, as we have already observed, there is a sense of mental energy to the last which is far more than commensurate with the actual strength of the body.

Muscular fibres as much affected as the fluids.

How far salt provisions alone might produce sea-scurvy it is scarcely worth while to inquire; for there is no extensive history of the disease in which they have acted solitarily; having always been more or less united with a cold or damp atmosphere, great fatigue, or a want of proper and invigorating exercise, want of ventilation, neglect of cleanliness, and very generally short rations, or an unwholesome diet of other aliments besides salt meat.

Now these are causes which must have a direct influence on the fibrous structure, and consequently on the whole organization of the body before the fluids can become affected; and it is easy to trace the changes which

and affected before the fluids.

* Treatise on the Scurvy, &c. p. 277.

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occur in them subsequently to, and through the medium of this influence.

Digestive organs suffer first:

Under the circumstances we are now contemplating, the digestive organs suffer first; they become weakened in their power, and, for the reasons already stated when treating of MARASMUS, the weakness will extend through the whole range of the digestive chain, and influence all the organs of assimilation; whilst the lungs, the brain, the heart, and the skin, unite in the general debility. Hence none of the secretions will be sufficiently elaborated, or, perhaps, in sufficient quantity: there will be a less supply of sensorial energy, and a less vigorous action of the vascular system: a smaller formation of gluten, and elimination of carbone from the lungs. And hence, as a necessary consequence, the looser texture, and deeper hue of the blood: for as the secretion of gluten becomes diminished, whose quantity is dependent upon the firmness and elasticity of the living fibre, the blood must evidently be attenuated; and, as a smaller portion of carbone is discharged by the lungs, the blood must be proportionally of a darker colour.

and influence the assimilating powers.

Effects of this influence on the system;

and ultimately on the blood.

Hence the solidum vivum alone asserted to be the seat of disease by some writers.

On this account Girtanner,* and other pathologists who refer sea-scurvy exclusively to a looseness of the solidum vivum, have more to advance in their behalf than those who refer it exclusively to a looseness of the fluids. But both are affected, and affected equally, though the former takes the lead. Sea-scurvy is, therefore, a disease whose proximate cause is a putrescent, though not a putrid state of the animal solids and fluids produced by an assemblage of antecedents co-operating to a common effect. In the course of their action, an acrimonious principle is unquestionably evolved, which seems to exacerbate the disease by increasing the tendency to decomposition; and it is highly probable that this acrimony is greatly augmented by the introduction of an excess of salt.

Necessary induction.

An acrimonious principle evolved.

All the causes necessary to be attended to.

It is assuredly, however, not necessary that all the

* In Blumenbach. Bibl. Band. III. p. 527.

causes we have adverted to should operate at the same time. But it is of the utmost importance, both in preventing the appearance of the disease and in effecting its cure where it is present, to have the eye cautiously directed to every one of them, and to destroy its agency as far as we are able. And it is owing to the unremitting attention which is paid to these points in the navy of our own country, that sea-scurvy has long been rarely heard of in English fleets or English merchant ships; and that the globe is perpetually sailed over, and the highest as well as the hottest latitudes coasted and cruised in, without the generation of this destructive plague. And thus it has been ever since the celebrated and extraordinary circumnavigation of Captain Cook in the Resolution; in which, by first laying down a code of regulations for the government of his crew, founded on the soundest judgement, and afterwards persevering in them with an unremitting spirit directed to all the subjects before us, he was enabled to fulfil his voyage of three years and eighteen days with a company of a hundred and eighteen men, traversing all climates from fifty-two degress north to seventy-one south, with the loss of only one man by disease, and that man apparently labouring under a consumption before he left home.

GEN. X. SPEC. III. Porphyra nautica. Sea-scurvy in attempting a cure: and hence the general health of English fleets in modern voyages. Admirable management of Capt. Cook: and wonderful salubrity of his crews.

The regulations and management adopted by Captain Cook are contained in his paper communicated to the Royal Society, and printed in its Transactions.* It is a paper of the highest merit, and was justly honoured with the Copley medal for the year. In conjunction with Sir John Pringle's additional remarks upon it,† it has laid the chief foundation for the present mode of treating this disease, and particularly of providing against its attack. The principles it unfolds should be canvassed by the nautical student in the communications themselves, in con-

His regulations the basis of all subsequent improvements in the medical as well as economical treatment.

* Vol. LXVI. year 1776, p. 402.

† A Discourse upon some late Improvements of the Means for preserving the Health of Mariners, &c. 4to. London.

GEN. X. SPEC. III. Porphyra nautica.

junction with the later works of Sir Gilbert Blane* and Dr. Trotter.†

Sea-scurvy

With proper accompanying auxiliaries, the medical treatment simple.

With the auxiliaries of cleanliness, proper ventilation, a dry atmosphere, and fresh provisions, the medical treatment of sea-scurvy is sufficiently simple, and the disease is found to yield easily. The means more immediately effectual are the native vegetable acids, and above all that of lemons, upon which we shall speak more at large presently, all sorts of fermented liquors, the alkalescent plants, as garlic, scurvy-grass, water-cress, garden-cress, brook-lime, which, notwithstanding their alkalescence, contain a great quantity of acescent matter, and by their acrid property promote the excretions of urine and perspiration; and the spruce-fir, as well as other plants of the coniferous tribe that contribute to the same purpose.

Chief antiputrescents.

Acids.

Alkalescent plants.

Coniferous tribe.

Rubus Chamæmorus.

The fruit of the rubus *Chamæmorus*, or cloud-berry, found on boggy mountains in our own as well as in more northern countries, is also a cheap and valuable antiscorbutic. In Sweden, from the recommendation of Linnéus principally, the berries are eaten very largely as a confection; the Laplanders, in whose gloomy region the plant grows in great abundance, preserve considerable quantities of the fruit in snow, and export them to Stockholm in casks.

Burdock.

Arctium Lappa.

The burdocks were formerly very much extolled in scorbutic and almost every other disease of the present order, and especially the arctium *Lappa*, clotbur, or great burdock, common to the wastes of our own country, which was supposed to possess all the powers of the China and sarsaparilla roots. The root given in decoction is certainly a diuretic and diaphoretic; but as an antiscorbutic it is of far inferior merit to the plants already mentioned.

Malt infusions.

The infusion of malt, as recommended by Dr. Macbride, does not seem to have answered all the expectation entertained concerning it. Dr. John Clark affirms freely

* Treatise on the Diseases of Seamen.

† Medicina Nautica.

and candidly, that in various cases in which he tried it, with all the concomitants of pure air and good nutriment, it had no influence either in removing the disease or in checking its progress; in consequence of which he preferred Dr. Silvester's antiscorbutic drink, which is made by boiling three ounces of cream of tartar, four ounces of juniper-berries, two drachms of ginger in powder, and five pounds of coarse sugar in six gallons of water. After boiling half an hour, the whole is poured into a tub and allowed to ferment. It may be drunk as soon as the fermentation commences, from one to three pints daily.*

GEN. X. SPEC. III. Porphyra nautica. Sea-scurvy.

Silvester's antiscorbutic drink.

Captain Cook, however, thought very highly of malt sweet-wort, and esteemed it one of the most powerful antiscorbutics. The Russians, for want of sweet-wort or table-beer, employ a brisk acidulous liquor called quas, formed by fermenting small loaves made of ground malt and rye-meal. Dr. Mounsey tells us that this is the common drink of both the fleets and armies of the Russian empire. Oatmeal is also occasionally used for the same purpose, in the form of an acidulated gelatinous food denominated *soins;* made by infusing the meal in water till a fermentation commences and the liquor grows sourish, which in a moderate temperature will take place in about eight and forty hours. The liquor is then poured off from the grounds, and boiled down to the consistence of a jelly, which, sweetened with sugar and mixed with a little wine, yields an aliment not less palatable than medicinal.

Russian quas.

Soins.

Pure fresh water is also another material of great importance, not only in curing this disease, but in guarding against it: and of so much moment did Captain Cook esteem its purity, as well as its freshness, that he had the old stock poured away, though procured only a few days before, whenever he had an opportunity of obtaining a new supply. And at a time when it was universally conceived that the frozen water of the ice-bergs consisted of salt water, or was unwholesome as formed of frozen snow,

Pure fresh water: its great importance.

* Observations on Diseases in long Voyages, &c. 8vo.

GEN. X. SPEC. III. Porphyra nautica. Sea-scurvy.

it was matter of most agreeable surprise to him to find that the melted ice of the sea, from whatever quarter derived, is not only sweet, but soft, and as wholesome as the purest spring or river water; thus affording him a supply he had no expectation of finding.

Means of preserving water pure.

The best means of preserving water pure is by keeping it in casks charred for the purpose on their inner surface: and the best means for restoring it to purity when it has become foul and offensive, is by mixing a little fresh powered charcoal with every cask before it is tapped, and in drawing it off through a stone filtering cistern, containing a bed of the same material.

Gasses.

As fermented liquors have been found serviceable, many of the gasses have been tried in their simple form, and some of them have been thought serviceable; but their carriage, or the means of obtaining them extemporaneously, is highly incommodious: and it was well observed by that excellent navigator La Pérouse, that seamen may be gorged with bottles of them without deriving a thousandth part of the benefit produced from good slices of fresh meat, fruits, and herbs.

Specific powers of citric acid.

Of all the antiscorbutics, however, that have thus passed under our survey, the citric acid, or that of lemons, is the only one that can make an approach towards the character of a specific for sea-scurvy; and how well entitled this medicine is to the maintenance of such a claim, now that the mode of preserving it in a state of activity, first suggested by Dr. Lind, has been fully established, the following brief, but triumphant narrative of Dr. Baird, will sufficiently evince:—

Illustrated from Baird.

"The next time I saw this disease in a very spreading degree, so as to affect the whole fleet, at a period when the existence of the country depended upon that fleet keeping the sea, was in the year 1801, when my Lord St. Vincent took the command of the channel fleet. A short time after we sailed, and in not more than a fortnight, the scurvy made its appearance, and spread very rapidly through the fleet. Fresh provisions were not then supplied to it as now, nor vegetables.

Being aware that lemon-juice was then in store and could be drawn for the fleet, I expressed to the Commander-in-Chief my great anxiety that a fresh supply should be had as fast as possible. The fleet was then blockading Brest: a cutter was dispatched to communicate the state of the health of the fleet; a supply of lemon-juice came out, and we gave it freely to those labouring under the disease, and daily, mixed with water and sugar, to the whole of the crews of the ships, and continued its use during the time we were at sea, which was nearly seventeen weeks; during which time the fleet had not, as a fleet, a single fresh meal, nor any thing in the shape of an antiscorbutic but lemon-juice. The disease under the use of this totally disappeared; we returned with twenty-four sail of the line into Torbay, out of which number there must have been ten or twelve three-deckers; and I think, estimating fairly, there could not upon an average have been less than seven hundred men in each. When we arrived, the surgeons of the fleet were desired to make a return of the number of patients fit for the hospital. They made a return of twenty-four. I was directed by the Commander of the fleet to examine them, to see whether they were subjects for the hospital. I found eight of them were cases of hernia, or surgical cases that could not be benefited by the hospital. I selected sixteen from them. Out of twenty-four sail of the line there was not a single case of scurvy; and, what was extraordinary, to such a state of health was that fleet brought by the use of lemon-juice, that the Glory had only four men on her sick list; so that out of fifteen or sixteen thousand men, there were only sixteen subjects for the hospital; and some of the ships had not lost a man at that time."*

GEN. X. SPEC. III. Porphyra nautica. Sea-scurvy

As the vessel of a tainted crew approaches land, nothing is more common or apparently more reasonable, than for those that are most affected to be most anxious to be

Sick should not be suddenly removed ashore.

* Report of the Committee of the House of Commons upon the Penitentiary at Milbank, 1823. p. 199.

GEN. X. SPEC. III. Porphyra nautica. Sea-scurvy

Often sink in the attempt.

put on shore at the moment. Yet for reasons we have already urged, this should rarely be complied with; for the real debility is so much greater than the apparent, or, in other words, the energy of the mind is so much greater than that of the body, that they often sink under the labour of the removal, and sometimes die before they reach the asylum provided for them. In cases of extreme weakness, the external air alone, and especially when sharp or in a current, is sufficient from its pressure and stimulus to puff out the little flame that flickers in the vital lamp: a fact which, to adopt the words of Dr. Trotter, "has been long observed, and recently confirmed by five men dying in the boat belonging to the Prince of Wales ship of war, between the Downs and Deal hospital."

GENUS XI.

EXANGIA.

ENLARGEMENT, BREACH, OR OTHER MORBID PERFORATION OF A LARGE BLOOD-VESSEL, WITHOUT EXTERNAL OPENING.

GEN. XI. Present position of the genus justified.

THE expediency of placing this genus in its present situation among diseases dependent on a "morbid state of the blood or *blood-vessels*," would be obvious to every one, even though the maladies it embraces were in every instance local. This, however, is rarely the fact; for the first two species included under it result commonly from a peculiar diathesis; and the last is productive of severe, and often fatal constitutional, disorder. These species are as follow:

1.	EXANGIA ANEURISMA.	ANEURISM.
2.	——— VARIX.	VARIX.
3.	——— CYANIA.	BLUE-SKIN.

SPECIES I.

EXANGIA ANEURISMA.

Aneurism.

PULSATING TUMOUR OF AN ARTERY.

GEN. XI. SPEC. I.

Causes.

That of debility most common.

May be local or general.

Aneurismal diathesis: producing an aggregate, or succession, of aneurismal tumours.

Supposed causes: all resolvable into vascular debility.

THE disease of aneurism, which consists in a permanent dilatation or breach of the coats of an artery, may be produced by external violence as a strain or puncture, or by arterial debility. The last is the more common cause, and it may be local or general; it may be limited to the part in which the aneurismal swelling occurs, or it may extend through the whole range of the arterial system, which is sometimes found to be universally, though irregularly, feeble, and consequently feebler in some parts than in others. It is this last condition of the arteries which constitutes what has been called the aneurismal diathesis: and under its influence aneurismal tumours not unfrequently occur in different arteries of the same individual, simultaneously or in succession.* De Haen gives a singular example of this in a boy of seventeen :† and Lancisi has conjectured this diathesis to be produced by gout, rheumatism, apoplexy, and a sedentary life ;‡ to which Guathani has added syphilis,§ and Freer, still more lately, inflammation of the arterial tunics. In all

* Saporta, Dissertatio de Tumoribus.

† Rat. Med. iv. 2. § 7.

‡ De Subitaneâ Morte, 100.

§ De Aneurismatibus.

which cases we can trace the common fact of great vascular debility induced generally, or in the particular limbs which have been the seat of the predisposing disease. It is often accompanied with a calcareous thickening and rigidity of the arterial trunk in particular parts.

GEN. XI. SPEC. I. Exangia Aneurisma. Aneurism.

Aneurism is ordinarily represented as appearing under only two forms, the true, or, as Mr. B. Bell more particularly denominates it, the encysted,* and the false or diffused. To these it is necessary to add the varicose of Dr. Hunter, and the cardiogmus of the Greek writers; thus presenting us with the four following varieties:

Disease appears under four varieties.

α Cysticum.	Encysted aneurism.
β Diffusum.	Diffuse aneurism.
γ Varicosum.	Varicose aneurism.
δ Cardiogmus.	Aneurism of the præcordia.

The TRUE or ENCYSTED variety forming the aneurism by dilatation of M. Petit,† is characterized by the tumour being circumscribed or having a defined outline; and is produced by a yielding or dilatation of the coats of an artery so as to form a sac, which constitutes the sphere of the arterial enlargement.

α E. Aneurisma cysticum. Encysted aneurism. Distinctive character.

The tumour, when first observed, is small and excites little attention; for there is no pain, the skin is of its natural appearance, and the tumour vanishes when pressed upon by the finger. But during the pressure a pulsation is clearly distinguishable corresponding with that of the artery below. As the disease advances, the tumour increases; and when it has gained considerable magnitude, the skin becomes pale, and even edematous; the pulsation still continues, though the tumour yields less regularly to the pressure of the finger than heretofore, being soft and fluctuating in some parts, but, from coagula lodged and hardened in the sac, firm and resisting in others. The seat of the aneurism at length becomes distressingly painful from the increased coagulation and

Description.

* Syst. of Surg. Vol. I. Ch. iv. p. 196.

† Mémoires de l'Acad. des Sciences, 1736.

GEN. XI. SPEC. I. *a* E. Aneurisma cysticum. Encysted aneurism.

swelling; the skin assumes a livid hue, and seems verging to a gangrenous state; a bloody serum oozes from it, and it often ulcerates: when the walls of the arterial sac, meeting with less support than hitherto, give way, the blood bursts forth with violence, and, if the artery be large, soon produces death by inanition.

Internal aneurisms only to be suspected from general symptoms.

Such is the general course of encysted aneurisms that show themselves externally; but as they occasionally occur in vessels more deeply seated, we cannot so readily mark their progress, and can often only guess at their existence. They have been discovered, however, by particular symptoms in the chest, neck, head, forehead, temples, and back, as well as in every limb; and it is difficult to say which part is most subject to their appearance.

Sometimes mistaken for other diseases.

How distinguishable.

In an early stage of the disease, it cannot easily be mistaken for any other; for the signs of a regular pulsation, absence of pain, and disappearance of the tumour on pressure, are sufficient to distinguish it. But when, in the progress of the complaint, the pulsation becomes almost imperceptible, and the tumour hard, it has been confounded with other encysted tumours, scrophulous swellings, and abscesses. The last is the most common error, and, by leading to an injudicious opening, has sometimes proved a fatal one.*

The disease sometimes finds a natural cure

when unconnected with an aneurismal diathesis.

The disease has occasionally been cured naturally by a deposit of coagula in the sac, which, as they have gradually increased, have gradually also filled up and obliterated the cavity of the sac. Mr. Hodgson has given a curious case of this kind in his treatise, "on the Diseases of Arteries and Veins." In such instances, however, it is probable that the disease is unconnected with an aneurismal diathesis, and is a result of some local cause.

Sometimes cured by pressure.

Pressure, under the same circumstances of local affection, has sometimes produced a like good effect. Dr.

* Reinesius. Schola Ictorum Medica. p. 321.

Albers of Bremen gives an instance of this even in an aneurism of the femoral artery.* It has commonly been said that the compress should never amount to more than an easy support to the weakened and enlarged organ:† and it is very probable that tight bandages, by impeding the circulation in the adjoining veins as well as arteries, have often proved injurious. Dr. Perceval, however, in the manuscript comment with which he has enriched the author's volume of Nosology, has the following notice under the present head; seeming to show that even a tight compress has at times been of the highest advantage; and a like success is related by Acrel in an aneurism of the aorta.‡ "In the rebellion of 1798, an officer received a wound from a bayonet which grazed the left carotid artery and produced a pulsatory tumour: this was kept down by a spring collar, and at length disappeared. Many years after, having lived rather freely, he died dropsical. Previous to his death, he had a most violent palpitation of the heart, and discharged by stool immense quantities of blood. The heart was not found enlarged, but the cavity of the left carotid was almost entirely obliterated."

GEN. XI. SPEC. I. α E. Aneurisma cysticum. Encysted aneurism.

Compress in general should be easy and only afford support.

But a tight compress has sometimes proved most successful. Illustrated from Perceval's notes.

In connection with pressure, great benefit has also frequently resulted from keeping the amount of the circulating fluid in a diminished state by occasional venesections, purgatives, and a spare diet. Morgagni relates a case in which such a regimen alone effected a cure when commenced early.§ Yet it is obvious that in some habits a cure, even of the same artery, is obtained much more easily than in others: and hence it seems sometimes to have taken place spontaneously, of which an example is given by Mr. Crampton in the Medico-Chirurgical

Patient should be kept in a reduced state.

Spare diet alone has effected a cure.

Aneurism has ceased spontaneously.

* Trans. of Medico-Chirurg. Soc. Vol. IX.

† Cagnior, Dessault, Journ. de Chirurg. Tom. II.

‡ Chirurgische Vorfälle. Band. I. 44.

§ De Sed. et Caus. Ep. XVII. Art. 30, 31

GEN. XI. SPEC. I. Transactions;* and by Mr. Ford, in a journal of an earlier date.†

α E. Aneurisma cysticum. Encysted aneurism.

Every palliative mean should be had recourse to before an operation is resolved upon: for even under the most favourable circumstances such a step is hazardous, and it is peculiarly so when the aneurism is connected with a diseased state of the arterial trunk or the whole arterial system, of which it is seldom possible for us to form a correct judgement. To describe the nature of the operation would be to travel into the province of surgery. I may, however, observe that in cases of necessity it has often been performed with full success, and even a perfect use of the affected limb, in trunks of a very large calibre. Sir Astley Cooper has given an account of two cases in which the operation was effected on the carotid artery. The first proved unsuccessful from the long standing and size of the sac which pressed with perpetual irritation on the larynx and pharynx, exciting frequent fits of coughing, and preventing deglutition. The second case terminated favourably; but the tumour was smaller and of more recent growth.

Operation only to be performed in extreme cases.

Yet has been performed successfully on arteries of large diameter.

β E. Aneurisma diffusum. Diffuse aneurism.

In the SECOND VARIETY or DIFFUSE ANEURISM, the aneurism by infusion of M. Petit,‡ the coats of the artery, instead of being dilated into a sac, are divided; and, the blood flowing at large into the cellular or other surrounding parts, the tumour is extensive and undefined.

Generally produced by external violence.

This is usually the result of external violence: the swelling often spreads to an unlimited range, and the progress towards a rupture of the integuments is more rapid than in the last. Here, pressure is of no avail, and even mischievous; since it will more effectually obstruct the course of the blood in the surrounding veins,

Pressure of no benefit, and the operation mostly indispensable.

* Vol. VII. p. 341.

† Lond. Med. Journ. Vol. IX.

‡ Desault. Journ. de Chirurgia. p. 321.

than in the divided artery: and the operation can rarely be dispensed with. Mr. B. Bell was fortunate enough to succeed in the case of a division of the great ileac artery just at its egress from the pelvis. The division was produced by an accidental and forcible entrance of a pair of long-pointed scissors into the hip. The patient fainted from loss of blood, and the wound on the surface was healed. The aneurism, however, continued; fresh blood was perpetually poured forth; in six weeks, the tumour on the hip became enormous, the thigh was rigidly contracted, the ham recurvated, the leg shrunk, cold, and useless. On making an incision eight inches long, the blood issued in such torrents that the patient fainted, and was supposed to be dead or dying, but the artery could not be traced. At this critical moment Mr. Bell ran the bistoury upwards and downwards, and at once made the wound two feet long: when thrusting his hand to the bottom of the tumour, he felt the blood still jutting warm from the artery, laid hold of it, and found it to be the posterior ileac cut through transversely. He tied it, and, loosely dressing the wound, left the patient on a bed in the operation-room, as he was too much reduced to be removed. In seven months he was completely restored to health, and recovered the entire use of the affected leg.

GEN. XI. SPEC. I. β E. Aneurisma diffusum. Diffuse aneurism. Success of B. Bell in a formidable aneurism of the ileac artery.

THE THIRD VARIETY OF VARICOSE ANEURISM was first distinctly pointed out by Dr. Hunter, who characterized it by this name. It is produced by puncturing an artery through a vein that lies immediately above it and upon it, as in blood-letting at the arm, so that the arterial blood flows from the arterial puncture, not through the cellular substance, but into the superincumbent vein through the corresponding venous puncture. In this case, the tumour is elongated, taking the course of the vein, which is hereby distended and rendered varicose. Sometimes, indeed, where the venous communications are frequent, all the adjoining veins participate in the distention, and are equally affected. The tumour, as in the first variety,

γ A. varicosum. Varicose aneurism. How produced. Description.

GEN. XI. SPEC. I. 2 A. varicosum. Varicose aneurism.

disappears upon pressure; and, as soon as the pressure is removed, the blood issues from the arterial puncture with a whizzing sound and a tremulous motion, rather than a distinct pulsation.

Least dangerous of all the varieties, and generally relieved by pressure.

This is the least dangerous of all the forms of aneurism, and that in which pressure may be applied most successfully. It has sometimes produced a radical cure; but in all instances so far succeeded as to render the operation unnecessary, provided the patient passes a quiet and unfatiguing life: for it has been known to exist twelve, twenty, and even thirty years, without any serious injury to the general health.

3 A. cardiogmus. Aneurism of the præcordia.

The FOURTH VARIETY is distinctly a constitutional affection, and usually of considerable distress and oppression. It is characterized by an obtuse intumescence and constant disquiet of the præcordia; with a sense of internal weight and pulsation increased on the smallest motion; according to Corvisart the carotids throb, the pulse is strong, hard, and vibrating. It is the CARDIOGMUS of Galen and Sauvages; the aneurisma præcordiorum of many authors, and the polypus cordis of others. The symptoms are usually found on dissection to proceed from an aneurismal enlargement of some part of the substance of the heart, or the larger vessels in its immediate neighbourhood; but whether, as Corvisart affirms, the enlargement be more common to the left than the right ventricle,* is not satisfactorily determined. It is sometimes accompanied with, and perhaps produced by, a polypous concretion; and sometimes without any such substance whatever: and, where the larger vessels are affected, they are here more than in any other variety thickened and rendered rigid by irregular deposits of calcareous or ossific matter.

Description.

Common causes.

Found chiefly in advanced life and where there is organic debility.

It is sometimes a result of violent exertion; and is then mostly an affection of the young and the strong, of those who engage in manly exercises, or are subject to violent

* Sur les Maladies et les Lesions Organiques de Cœur, &c.

passions. But it is more frequently a result of debility, and chiefly to be met with in persons of advanced age. It is well observed, indeed, by M. Rostan, that a dilatation and thickening of the walls of the heart are not a consequence of great power or strength of constitution with energy of healthy action; but is generally caused by that state of the arteries which is an ordinary result of old age, in which they lose their natural elasticity, and become ossified, thick, inorganic tubes.* This ossification affects the valves of the heart as well as the vessels in its neighbourhood, whence the heart is perpetually oppressed, and called upon for increased action: which increased action itself is another cause of increased thickening in the cardiac coats.

GEN. XI. SPEC. I. ♂ A. Cardiogmus. Aneurism of the præcordia.

This, however, is the *passive* enlargement of M. Corvisart; who gives us also a thickening and enlargement, which he calls *active;* in which the increased action of the heart, instead of being confined to itself, is extended to its parietes, to the vessels that issue from it, and consequently to the pulse generally. M. Laennec has acceded to this last form of disease,† and it constitutes his *hypertrophia.* His stethoscope, of which we have already spoken, may often be advantageously employed, in this case, as a diagnostic.‡

Passive enlargement of Corvisart. Active enlargement. Hypertrophia of Laennec.

The disease not unfrequently proceeds from a distinct cyst sometimes traced in the substance of the heart, as the right auricle, of which an example is given by Bartholin;§ or of the left ventricle, as stated by Dr. Douglas;‖ but more usually in the arch of the aorta.

Sometimes produced by a distinct cyst in the heart or adjoining arteries

And in some instances this cyst, or some other morbid structure has been found to become so much enlarged as to encroach in a very considerable degree upon the na-

Cyst sometimes enormously enlarged.

* Nouveau Journ. de Medicine, Tom. I. p. 367.

† De l'Auscultation Médiate: ou Traité du Diagnostic des Maladies des Poumons et du Cœur, &c. 2 Tomes. Paris 1819.

‡ Suprà, p. 230.

§ Act. Hafn. IV. Obs. 47.

‖ Phil. Trans. Vol. XXIX. 1414-1416.

GEN. XI. SPEC. I. β A. Cardiogmus. Aneurism of the præcordia.

tural capacity of the heart. And hence though the general substance of the organ with its diseased increase of growth has weighed, upon dissection, fifteen pounds, the cavity, in a few rare instances, has hardly equalled that of a walnut. M. Portal, who is disposed to admit of M. Corvisart's division of the disease into active and passive, seems chiefly to object to the term dilatation as applied to the heart in this state of engorgement.*

Cause sometimes capable of being traced during life.

In many of these cases we can trace the cause; for the aneurismal artery is at times as contracted in the vicinity of the sac, as if it had been tied by a ligature. The aorta has occasionally, in this manner, been rendered altogether impervious, the circulation being continued by an enlargement of the anastomosing vessels.†

By Morgagni ascribed to a narrowness of the larger arteries.

On this account, Morgagni ascribes the disease before us to a narrowness of the larger arteries as its common cause; and hence explains why it is so frequently found among tailors, and other sedentary workmen.‡

Medical treatment.

The medical treatment can be rarely more than remedial. Fatigue and great exertion must be sedulously avoided, together with keen mental excitement. The diet should be light, the meals and hours of rest regular; and the exercise should be that of a carriage. The bowels must be attended to: and, where the palpitation or other distress is peculiarly troublesome, it may sometimes be relieved by camphor, volatile alkali, and tincture of hyoscyamus.

We may observe, before quitting the subject, that the largest aneurisms have been those of this quarter, and particularly of the aorta, as there is here the greatest force of action. Littre gives a description of one of the superior trunk that ascended as high as the maxilla;§

* Mémoires sur la nature et le Traitement de plusieurs Maladies. Tom. IV. 8vo. Paris 1819.

† Cooper and Travers's Surgical Essays. I. p. 125.

‡ De Sed. et Caus. Ep. XXI. 49. XXVI. 31—33.

§ Mem. de l'Acad. Royale des Sciences à Paris. Ann. 1707.

and Teichmeyer of another that burst into the pericardium.* From their extent and pressure they often erode the cartilaginous and even bony substance of the ribs; and La Faye relates a case in which a part of the sternum as well as two cartilages of the ribs were hereby destroyed.† In an enormous aneurism of the abdominal aorta, Morgagni mentions that the posterior wall of the artery itself was destroyed, the neighbouring parts supplying the place of a wall:‡ and in a like aneurism of the thoracic branch he found the bones in the vicinity broken and demolished by the force of its pressure.§

GEN. XI. SPEC. I. Exangia Aneurisma. Aneurism. Medical treatment.

SPECIES II.

EXANGIA VARIX.

Varix.

SOFT, LIVID TUMOUR OF A VEIN.

THIS disease is to veins what the true or encysted aneurism is to arteries. The coats of the veins are preternaturally dilated, and more in some parts than in others, so that a vein thus enlarged to any considerable extent often appears to be a chain of venous cysts; and as contiguous veins often communicate, the enlargement is not unfrequently extended from one to another till the whole forms a plexus of varices, and every part seems ready

GEN. XI. SPEC. II. Description. Resemblance to the encysted aneurism.

* Dissert. de Stupendo Aneurysmate Brachii, &c. Jen. 1734.

† Phil. Trans. N. 287.

‡ De Sed. et Caus. Morb. Ep. XL. 26.

§ Ep. XVII. 25—27.

GEN. XI. SPEC. II. Exangia Varix. Varix.

to burst. In some instances, they are said to have bursted. This assertion, however, wants confirmation: but if it were true, we should be put into possession of a diffused as well as an encysted variety of veins, and the disease would make a still nearer approach to that of arteries.

The varix sometimes said to burst: in which case it resembles the diffused aneurism.

This affection mostly occurs in the veins of the lower extremities in consequence of their being the most dependent part. They often arise spontaneously in persons of lax fibres; but are far more frequently a consequence of undue fatigue, strains, cramps, or pressure. The most frequent cause is a pressure of the fetus in pregnancy against the external iliac veins, in consequence of which the blood ascends with difficulty from all the veins below, which become distended and weakened by its accumulation.

Found chiefly in the lower extremities.

How produced.

Sometimes found in other parts.

From strains or other causes, however, varices have been occasionally traced in other large veins than those of the extremities. Thus Tozzetti discovered one after death, in the vena *azygos*;* and Michaelis describes another that terminated fatally in the jugular vein.† They are also met with in the spermatic veins; and in this position have very generally been described under the incorrect name of circocele or varicose rupture. Morgagni asserts that the spermatic varix appears more frequently on the left than on the right side, from the insertion of the spermatic vein into the emulgent.‡ They are often possessed of considerable irritability in themselves, and almost always add in a high degree to the irritability of diseased parts in their vicinity, so that if an ulcer or an erysipelas take place contiguously it will rarely admit of a cure till the varix be first removed.§

Circocele what.

Often highly irritable.

Medical treatment.

The best remedy in all cases where it can be applied is a moderate, steady, and continued pressure: which, where the varix occurs in the legs, is easily accomplished by an elastic stocking, or, which is preferable, a circular

* Prima Raccolta di Osservazioni Medici, Firenc, 1752.

† See Richter's Chirurgische Bibliothek in loco.

‡ De Sed. et Caus. Morb. Ep. XLIII. Art. 34.

§ Mem. de l'Acad. Royale des Sciences à Paris. Ann. 1707.

bandage of fine elastic flannel. Dauter's plan of using cold water is also a very simple, and, where the varix is fresh, not unfrequently a very efficacious remedy:* but how far a solution of mineral acids or metallic salts may add to its virtue, as recommended by some practitioners, the author cannot affirm from his own practice.

GEN. XI. SPEC. II. Exangia. Varix. Varix.

From their disfigurement and great discomfort varices have sometimes been attempted to be removed by a division between two ligatures, not widely different from the operation for the aneurism. The attempt has succeeded where there is neither local nor constitutional irritability: but it has more frequently failed, and the inflammation hereby produced has occasionally proved fatal.† Yet where the effect is less extensive it is apt to be followed by a serious and far more diffuse enlargement of the vein with varicose prominences, similar to that which sometimes occurs in drawing blood from the arm; of which, till of late years, no very intelligent explanation has been given, and which I shall therefore endeavour briefly to illustrate.

Cure attempted by division. Often followed by more serious swellings of great length.

This singular and painful line of swelling was at first supposed to arise from the prick of a nerve: and it is perfectly clear that the tingling and shooting pains which succeed venesection, are sometimes produced by a partial division of a nerve, from an interesting case of Mr. Sherwen of Enfield that only yielded to an entire division of the nerve by a transverse section above the orifice, after every other attempt had been tried in vain.‡ But the nerves of the arm liable to be wounded in bleeding are mostly small and unimportant: while others are often pricked and wounded in many of the common operations of surgery without any serious consequence whatever.

Nature of such swellings explained.

* Von dem äuserlichen ortlichen Gebrauche des Kalten Wassers, &c. Leips. 1784. 4to.

† Observations on Varix, &c. By Richard Carmichael, &c. Trans. King's and Queen's Coll. Dublin. Vol. II. p. 345. 1834.

‡ Edin. Med. Comment. Vol. v. p. 430.—See also Study of Med. Vol. II. Cl. III. Ord. II. Gen. VI. Spec. V. p. 265.

GEN. XI. SPEC. II. Exangia Varix. Varix.

The mischief has by other writers as Heister, Garengeot, and Haller, been ascribed to wounding a tendon or its aponeurosis; but unluckily for such physiologists, tendons in other places are often torn or wounded with very little inconvenience. Even the Achilles-tendon, the largest in the body, is frequently broken, without any of the severe symptoms that sometimes arise from blood-letting. Besides which, the accident from bleeding occurs as frequently when a person has been bled in a vein which has no tendon near it, as where there is reason to expect that a tendon may have been wounded. It happens as often that a swelled arm is the consequence of bleeding in the cephalic or cephalic-median vein, as of bleeding in the basilic or basilic-median.

Nature of these extended swellings explained differently by different writers.

J. Hunter's explanation.

Mr. J. Hunter was the first physiologist who ascertained the real cause of the mischief before us: and traced it to a general principle which he laid down as applicable to all internal cavities; namely, that when injured or rendered otherwise imperfect they are often apt to inflame at the injured part, and to have the inflammation spread rapidly over their whole extent, as I have already had an opportunity of observing under peritonitis, puerperal fever, and on various other occasions. He was first led to this view of the cause in the case of veins from noticing what occasionally happens to horses. It is no uncommon thing for hostlers, out of an unnecessary or ill-judged care, to bleed these animals in the neck even when in perfect health: and in several instances of this kind Mr. Hunter had observed that the neck swelled, and the horse died; and, on examining the nature of the disease by dissection, he found that the cavity of the vein was inflamed, and that the inflammation had spread along its internal surface to the chest, sometimes even to the heart itself. And he afterwards found a like effect produced in the veins of the human arm, where inflammation had succeeded to bleeding; and particularly in one case that occurred in St. George's hospital, being that of a man who died suddenly on the eighth day after having been bled

in the basilic vein of the right arm, and having suffered from inflammation as a consequence. On dissecting the arm, he found not only that the cavity of the vein had inflamed, but that the inflammation had extended from the puncture, which had been made by the lancet in blood-letting, as high as the axilla; proceeding also to some distance below the puncture. About the middle of the arm the vein had suppurated; and, from the ulceration or absorption of parts which attends abscesses, the vein was divided into two; and each extremity, like the internal surface of the abscess, was irregular and jagged.

GEN. XI. SPEC. II. Exangia Varix. Varix.

Mr. Hunter was disposed to think that the principal cause which produces the inflammation of a vein after bleeding is the want of a disposition to heal, arising either from its being exposed, or in consequence of the lips of the orifice in the skin not being properly brought together. And he hence strongly advises that the sides of an opened vein should at all times be made to approximate as accurately as possible, and that the orifice in the skin should be drawn to one side of that in the vein, so as to make the skin do the office of a valve to the venal opening.*

There seems, however, in this explanation, to be a something wanting; and I cannot avoid thinking, as in the case of puerperal fever, that there must be at the same time some peculiar local or constitutional irritability predisposing the injured part to run into an inflammatory action: a striking instance of which, already slightly alluded to, occurs in a case communicated by Dr. A. Duncan. The patient, himself of the medical profession, twenty-eight years of age, had opened a boil on his hand with a lancet which had been applied to an obscure sore on the back of another person about a month previously, but against which no proof of being either poisoned or unclean could be brought forward. The in-

Explanation plausible but a something still wanting in it: Striking exemplification.

* Edin. Med. Comment. Vol. III. p. 430.

GEN. XI. SPEC. II. Exangia Varix. Varix.

flammation, instead of subsiding, after opening the tumour, increased, and spread up the arm to the axilla; but the swelling was attended with little redness, and no acute pain, though with considerable fever and restlessness. The affected arm, three days afterwards, exhibited one or two red streaks running up from the elbow to the shoulder, in the course of the cephalic vein; the breathing was much affected, quick, and short, but without pain in the chest; there was a troublesome cough, and the expectoration, though small in quantity, was tinged with blood. The countenance was anxious, depressed, and of a leaden hue; the features sharpened, the eyes sunk and dull; tongue foul; pulse a hundred and ten strokes in a minute. These symptoms increased in violence, with transient fits of delirium and subsultus tendinum; the intumescence of the arm, however, remaining to the eye, much the same, with little complaint of pain. The patient sunk gradually in just a week from about the first appearance of local affection; and ten days after using the lancet.

Progress of the case.

Termination.

Post-obit examination.

On examining the body, much chronic disease was found in the chest: the cartilages of the ribs on one side were slightly ossified: there was a general adhesion of the lungs to the costal pleura, pericardium and diaphragm, with a recent effusion of coagulable lymph; in some places a little coloured, and occasionally evincing a few fibrous shreds. The substance of the lungs appeared, also, generally unsound, and, in some parts, contained tubercles and calculi; one of the tubercles being as large as a nut, and filled with a yellow purulent-looking fluid.

The general health had borne up under all these chronic sappings, undisturbed, to the time of the local affection of the hand; as also under a protracted fatigue, through the whole of the preceding winter from a course of hard professional study; augmented, still more lately, by great mental anxiety and disappointment. All these seem to have produced a morbid excitement of habit, which, though not fatal of itself, gave a fatal tendency to

the inflammation on the hand, or rather to the irritation of the cephalic vein which was probably pricked on opening the boil, as will be sufficiently obvious from the appearances of the limb on dissection. Many livid spots were observed externally: the opened and unhealed ulcer was found to be accompanied with a swelling of the cellular substance, extending more or less up the whole arm. And, on making a long incision, from this ulcer to the top of the shoulder, a small abscess was accidentally entered into at the bend of the arm, which proved to be the cephalic vein accidentally divided, and unfolded the immediate seat of mischief. The vein appeared full of purulent matter; and, in consequence, was carefully traced through its entire range. "The disease of the vein consisted in external redness, arising from the increased size of the vasa vasorum; thickening of all its coats, so that it remained like an artery, round without collapsing: increased size, especially in the fore-arm; its containing no blood in any part of its course, and being generally filled with purulent matter, except in a few places where it seemed empty; and, in the inner coat, being every where red and thickened. The veins coming from the back of the fore-finger, middle, and ring finger, were all diseased: but that from the little finger was healthy."

GEN. XI. SPEC. II. Exangia Varix. Varix.

PHLEBITIS is far more easily produced than ARTERITIS, as veins are more irritable than arteries; but we hence learn, that even the former is occasionally influenced by constitutional excitement.

SPECIES III.

EXANGIA CYANIA.

Blue-Skin.

SKIN MORE OR LESS BLUE; LIPS PURPLE; GENERAL HEBETUDE, AND INACTIVITY.

GEN. XI. SPEC. III. General character of the species.

THIS species is designed to express that singular appearance and diseased state of the entire system, produced mostly, by a connate communication of the two ventricles of the heart, and consequently an imperfect discharge of the carbone of the blood at the lungs, which constitute the proper organ of its elimination. From the Greek κυανος, or "blue," Sir Alexander Crichton, in allusion to the colour of the skin by which it is peculiarly distinguished, has elegantly named it CYANIA, and the term has been adopted, as a specific appellation, on the present occasion.

General physiology. State of the circulation before birth.

Antecedently to birth, the lungs are of small comparative importance to the functions of life and growth, and hence no more blood seems to circulate through them than is necessary for their developement and health. The florid, or decarbonated blood, instead of being received from the lungs by the pulmonary veins, is received from the placenta by the venæ cavæ, and passes for the most part at once into the general circulation, chiefly by means of the foramen ovale by which the two ventricles communicate, and partly by means of the ductus arteriosus, by which the pulmonary artery at this time anastomoses with the aorta; that portion of blood only which escapes through this canal flowing forward into the col-

lapsed substance of the lungs; amounting probably to not more than a third or a fourth part of the whole.

GEN. XI. SPEC. III. Exangia Cyania. Blue-skin.

Immediately on birth, however, the plan of decarbonization is immediately changed. The fetal duct and foramen are closed, and the whole mass of blood flows, black instead of florid, from the venæ cavæ into the heart, and is sent by the pulmonary artery to the lungs for ventilation instead of to the placenta, in which organ, by the disengagement of the carbone with which it is loaded, and partly perhaps by the absorption of oxygene from the respired air (for the subject is still open to controversy), it acquires its perfect elaboration and florid hue.

Change produced by birth.

It is hence obvious that if, in consequence of any aberration from the common law which regulates the wonderful change that thus takes place in the infantine heart and its attached vessels at the time of birth, either of these communications should remain open, the venous or black-blood must wholly, or in a very considerable degree, be thrown back again into the general circulation instead of passing to the lungs: and the minute arteries on the surface, which give to the complexion its tinge, being filled with the same, the general hue must be changed from a florid to a blue or purple, more or less deep according as the pulmonary circulation is more or less impeded.

Course of the disease hence obvious:

Venous blood returned into the circulation not disburdened of its load of carbone.

It is this natural defect that constitutes the disease before us. In the varicose aneurism a small part of the florid or arterial blood flows through an accidental opening into the veins, but never in such a quantity as to disturb the economy of general health. In cyania a much larger, but variable proportion, of the black or venous blood flows by a physical opening into the arteries; and usually with serious inconvenience to the general health, most commonly indeed with fatal effects.

How far the ordinary disengagement of carbone from the blood may be dispensed with, or, in other words, to what extent these connate communications may remain, and the present disease take place without endangering the life, we have no exact means of ascertaining. Dis-

Preternatural openings in the foramen ovale may exist to a certain extent without serious mischief.

GEN. XI. SPEC. III. Exangia Cyania. Blue-skin.

but never so largely as to allow a blue tinge on the skin.

sections have shown us that the foramen ovale has continued partially open to old age, without much or even any interference with the common functions of health :* but we may confidently assert that, whenever so large a portion of venous blood is thrown into the arterial circulation as to give a blue or purple tinge to the lips or the skin generally, all the functions will be performed feebly, and there is great danger that the infant will never reach the age of puberty. There may be living power enough in the blood to support the growth of the frame during the retired and quiet tenour of infancy, in which there are no sudden exertions or calls for a more than ordinary expenditure of sensorial power; and hence, it is no uncommon thing for a child to survive the first three or four years of life with a skin completely blue, and consequently with a full proof that the foramen ovale, or the ductus arteriosus, or both, are open to a very considerable extent, and that not more than perhaps a third or fourth part of the general current of the blood passes into the lungs and undergoes the process of ventilation. But as soon as a more active period of life commences, and the child is trusted to his feet, and engages, or should engage, in the pursuits or even amusements of boyhood, with all its physical and moral excitements, the living power is not adequate to the demands made upon it, and he sinks beneath their oppression, and generally expires in a fainting fit. There is commonly, moreover, through the short and pitiable term of his existence the clearest proof of general torpitude and deficient energy; every exertion is a trouble, every stimulus produces fatigue: the muscles enlarge, but they want vigour and elasticity: and, so far as I have seen, the faculties of the mind are equally blunted. The celebrated blue-boy described by Dr. Sandifort, advanced farther towards an adult age than is by any means common. Here the aorta took its rise

Why infancy capable of enduring such a condition, and not puberty or adolescence.

Hence fatal in the last two stages :

and even in infancy productive of great debility and torpitude.

Blue-boy of Sandifort.

* Geschichte einer Chirurg. Privatgesellschaft in Kopenhagen.—Bertholin. Anal. Reform. Lib. II. cap. 8.

from both ventricles; the pulmonary artery was scarcely pervious to a small probe, and the difficulty of passing the probe from the heart to the lungs was greater than in the contrary direction. The patient was affected with an asthma from his second year and terminated the miserable series of his sufferings in his thirteenth.* In the case of a young female related by Morgagni the term of life was protracted to the sixteenth year; but there appears to have been a somewhat freer communication with the lungs, notwithstanding that the foramen ovale was open wide enough to admit the little finger. The patient, however, was sickly from her birth, and laboured under great general debility; her respiration was difficult, and her whole skin of a livid colour.† Dr. Holmes has lately communicated a similar case, but where the passage was somewhat more free: the patient in consequence reached the age of twenty-one, and then died of dropsy.‡

GEN. XI. SPEC. III. Exangia Cyania. Blue-skin.

Examples from other authors.

Life, however, for a short time has been maintained under still more complicated misformations of the heart, and adjoining arteries. Mr. Standert gives the case of a blue-child that lived ten days, in which the two ventricles communicated, there was no pulmonary artery, but its place was supplied by an artery that branched off to the lungs from the aorta in the situation of the ductus arteriosus, the blood from which was returned by four small pulmonary veins.§ And in Dr. Baillie's Morbid Anatomy is a still more complicated case of a child that lived about two months, in which the two ventricles communicated, but seem to change their respective offices; the aorta arising from the right ventricle, and the pulmonary artery from the left. The arterious duct was also open.‖ Mr. Richerand, however, gives an example, and it is the only one I am acquainted with, of a man who, under this

Misformations of the heart still more complicated, sometimes not inconsistent with a condition of life.

The middle of life attained and passed.

* Observationes Anatomico-pathologicæ, Lugd. Bat. 1777. 4to.

† De Caus. et Sed. Ep. XVI.

‡ Trans. of the Medico-Chir. Soc. of Edinb. Vol. I. Art. VI. 8vo. 1824.

§ Phil. Trans. 1805, p. 228.

‖ Plate VI. p. 21.

GEN. XI. SPEC. III. Exangia Cyania. Blue-skin.

disease, reached the age of forty-one: his flesh was of a relaxed fibre, his colour uniformly blue; and he could only sleep in a sitting position.*

Has arisen subsequently to birth.

In a few instances this disease has been suspected to arise subsequently to birth from some injury or diseased condition of the heart. M. Corvisart has related a case of this kind that terminated fatally in a boy twelve and a half years old, and who had manifested no symptoms of the disease till five months before he saw him, which was on his admission into the Clinique Interne, April 21, 1797. His countenance was puffed, his lips violet, his restlessness extreme. He died on the 25th of the same month. On dissection a foramen was found between the two ventricles capable of admitting the little finger.

Medicine of no avail.

In distressing affections of this kind the art of medicine is unavailable; and all we can advise is perfect tranquillity, a light diet, and attention to the state of the bowels. In one instance, and only one, I have seen the blueness of the skin gradually disappear a few months after birth, and the child grow stout; evidently proving that the morbid communication, whether in the foramen or the arterious duct, was closed by a natural process.

Cyania sometimes cured naturally.

* Nouveaux Elémens de Physiologie, &c.

GENUS XII.

GANGRÆNA.

Gangrene.

THE DEATH OF A PORTION OF THE BODY, WHILE THE REST CONTINUES ALIVE, OFTEN IN A SOUND STATE.

GEN. XII. Gangrene, sphacelus, and necrosis, compared.

GANGRÆNA, sphacelus, and necrosis have been hitherto used in very indefinite senses; sometimes as synonyms, and sometimes as different stages of a common disease. And even in this last view they have rarely preserved their gradations with any thing like an uniform consent; the whole of them sometimes expressing the highest and sometimes an inferior degree of the malady they equally import. For reasons stated in the volume of Nosology, the first of these terms is here employed in a generic sense, and the two latter as subdivisions or species included under it; sphacelus importing mortification as it occurs in its ordinary form, with lividity, vesication, ulceration, and fetor; and necrosis that insensibility and shrivelling of the flesh which occasionally occurs in paralytic limbs. The genus will also extend to two other species: as the gangrene which commences in a bone and is usually called a caries; and that peculiar form of the disease which begins insensibly in the extremities, and spreads without fever in an ascending direction till the affected limbs drop off in succession.

How related in the present system.

All these will therefore be treated of in the following order:

1.	GANGRÆNA SPHACELUS.	MORTIFICATION.
2.	——— USTILAGINEA.	MILDEW-MORTIFICATION.
3.	——— NECROSIS.	DRY GANGRENE.
4.	——— CARIES.	CARIES.

SPECIES I.

GANGRÆNA SPHACELUS.

Mortification.

THE DEAD PART SOFT, MOIST, CORRUPT, AND HIGHLY OFFENSIVE.

GEN. XII. SPEC. I. General character.

MORTIFICATION is a disease of debility; it is a total torpitude or insensibility of an organ while in the possession of its ordinary fluids and general structure, how much soever that structure may be injured, produced by a discontinuance of the living principle that has hitherto actuated it; in consequence of which the laws of animal chemistry, thus far held in subjection by the superior sway of the living power, acquire an ascendancy, a play of chemical affinities takes place, and putrefaction, or a decomposition of the organized substance, and a restoration of its constituent parts to their elementary forms, necessarily ensue.

Moist gangrene.

It is from this cause the affected part becomes soft, corrupt, and offensive, and is called *moist gangrene;* and not from an accumulation of animal juices as stated by Professor Frank; "ob succorum stagnantium an corruptorum abundantiam."*

Produced by opposite extremes of action.

This total debility, insensibility, or torpitude, may be produced by too much or too little action or excitement; for the vital flame may be supplied so rapidly as to destroy by its own violence, or there may be no supply

* De Cur. Hom. Morb. Epit. Tom. II. p. 13. 8vo. Mannh. 1792.

whatever. And we are hence furnished with the two following varieties of the disease: GEN. XII. SPEC. I. Gangræna Sphacelus. Mortification.

α Inductus.	Superinduced Mortification.	
β Atonicus.	Atonic Mortification.	

The ordinary causes of the first are fever, inflammation, local violence, or severe cold. Those of the second are old age, impure air, scanty or innutritious food; and, for the same reason, as Sir Clifton Wintringham has observed, ossification in the arteries of the part affected; which is, indeed, chiefly a consequence of old age.* Ordinary causes.

Where mortification ensues, upon a severe contusion or other injury, in a person of florid and vigorous health, and in the prime of life, we have an example of the FIRST VARIETY. There is in this case high inflammatory action, great heat, swelling and pulsation; the vessels are supplied with a superabundance of living power (the excitability of the Brunonians,) and are in consequence excited beyond their strength; they are hence worn out by the impetuosity of the toil, lose their tone, and become torpid and insensible from the vehemence of their own exertion. First variety exemplified.

The SECOND VARIETY may be illustrated by the mortification which so frequently takes place in the extremities of persons already exhausted by hard labour, intemperance, or advanced years, and whose extremities are bloated and anasarcous. Instead of a superabundant supply of living power there is, in this case, little or no power whatever; for the sensorial fluid is secreted so sparingly as to be almost incapable of reaching the extremities, and particularly the lower limbs: the muscular fibres of which, however, are in themselves so inirritable that a more than ordinary excitement is scarcely capable of rousing them; and hence they yield to the process of putrefaction from a cause the very reverse of what operates in the preceding case. Exemplification of the second variety.

* Comment. de Morbis quibusdam. &c. No. 54.

GEN. XII. SPEC. I. Gangræna Sphacelus. Mortification.

Under the first form, there is more pain and fever, as there is more sensibility and violence, than under the second; and, on this account, the destructive march is more rapid; but with these exceptions the symptoms, which are the ordinary ones of putrefaction, are the same.

Symptoms distinctive and general.

The colour of the skin changes to a dark red, or livid hue; the cuticle is separated from the true skin by the interposition of an ichorous fluid contained in vesicles, or bullæ, or diffused generally; it bursts by degrees; and the subjacent integuments are cold, black, flaccid, sloughy, and insensible; with a sanious or bloody discharge of a most offensive smell.*

Sometimes peculiarly rapid in its course.

If the sphacelus meet with no check from art or nature it spreads rapidly in every direction, particularly under the first variety; and more especially when aided by an impure or unventilated atmosphere, of which the hospital gangrene, as it is called, furnishes us with a fearful example.

Hospital gangrene. Description from Hennen.

"I have seen," says Dr. Hennen, "the external ear and the palpebræ destroyed in this manner as if in a series of concentric circles. Even upon surfaces barely contiguous, as the fingers and toes, it generally spreads in a similar way; so that the sore which might have been on the middle finger or toe, and confined entirely to it at the morning-dressing, by night engaged the adjoining sound ones, and in less than twelve hours more embraced the whole foot or hand. The gangrene still advancing, fresh sloughs were rapidly formed, the increasing cup-like cavity was filled up, and overtopped by them, and the erysipelatous livor and vesication of the surrounding skin gained ground, while chains of inflamed lymphatics could be traced from the sores to the adjoining glands; thus exciting inflammation and suppuration, which often furnished a new nidus for gangrene. The face of the sufferer assumed a ghastly anxious appearance; his eyes became haggard, and deeply tinged with bile; his tongue loaded with a brown or blackish fur, his appetite

* Frank. de curandis Hominum Morbis. Class II. Sect. 130.

entirely failed him, and his pulse was considerably sunk in strength and proportionably accelerated." GEN. XII. SPEC. I. Gangræna Sphacelus. Mortification.

During this state, Dr. Hennen adds that the bravest soldiers betrayed "the greatest imaginable impatience of pain and depression of spirits. Men who had borne amputation without a groan shrunk at the washing of their sores, and shuddered at the sight of a dead comrade; or even, on hearing the report of his death, predicted their own dissolution, and sunk into sullen despair. The third and last stage was now fast approaching. The surface of the sore was covered with a bloody oozing; and on lifting up the edge of the flabby slough, the probe was tinged with dark-coloured grumous blood, with which also its track became immediately filled: repeated and copious venous bleedings now came on, which rapidly sunk the patient; the sloughs, whether falling off spontaneously or detached by art, were quickly succeeded by others, and discovered on their removal small thickly-studded specks of arterial blood. At length an artery sprung, which, in the attempt to secure it, most probably burst under the ligature: the tourniquet or other pressure was now applied, but in vain; for while it checked the bleeding it accelerated the death of the limb, which became frightfully swelled and horribly fetid. Incessant retchings soon came on, and with cauma, involuntary stools, and hiccough, closed the scene."*

Great weakness of mind as well as of body.

Melancholy termination.

In this severity of attack and debility of the system, the compactest parts of the solids fall a prey as well as those that are more loose; but when the atmosphere is purer or more bracing, and the strength firmer, the cellular texture first and chiefly suffers. And we are hence able to understand the meaning of Dr. Riberi, of Turin, who, in describing a similar gangrene in the hospital of San Giovanni in that city, during the years 1817—1820, tells us that it often alternated from a sphacelating to an erysipelatous inflammation, the latter appearing as the former began to cease, on the return of a cooler or drier

Alternates sometimes with erysipelas.

* Principles of Military Surgery, 2d Edit. 8vo. Edinb. 1810.

GEN. XII. SPEC. I. Gangræna Sphacelus. Mortification.

air; or, where both co-existed, the slighter or erysipelatous affection being limited to the more robust patients, or those who were fortunate enough to lie in the best ventilated parts of the sick wards.*

A septic principle developed highly contagious.

In this extreme form of gangrene a septic principle appears to be developed, very highly acrimonious, and capable of propagating the same disease by contagion; for not only "upon surfaces barely contiguous" was it found to obtain an existence, but "the skin of other persons, although perfectly sound, which had been touched with a sponge employed in washing the gangrenous sores, ulcerated, and soon became itself a slough. This," adds Dr. Hennen, "was often observable among the orderlies and nurses;" and the description of Riberi does not essentially differ.

Mode of treatment in the different varieties.

The treatment belongs rather to the department of surgery than of medicine. It is obvious, however, that under the above two varieties it must be greatly varied to meet the variety of cause and constitution. Where an

Under an inflammatory diathesis.

inflammatory diathesis is present, evacuants of every kind must be had recourse to without sparing, as venesection, purging, and relaxants, while the local applications should consist of refrigerant epithems till the entonic action is completely reduced; after which, bark and the mineral acids, with a nutritive, but not a stimulant diet, should be chiefly relied upon; and if the fetor be considerable, powdered charcoal, or the yeast, or carrot-poultice should be applied topically. But where, on the contrary,

Under an entonic state from the first.

the mortification is that of atony, the warmest tonics and stimulants are demanded, both locally and generally, from the first.

Gangrene from frost-bite.

If the limb be frost-bitten, and there be danger of mortification from this source, a plan of treatment will be requisite, different from both the above, the advantage of which is known to every one, though the principle upon which it acts has never been clearly explained.

* Sulla Gangrena Contagiosa o Nosocomiale. Del Dottore A. Riberi. Torino, 8vo. 1821.

The torpitude or insensibility of the part affected is in this case evidently produced by the exhausting power of the cold, which destroys or extinguishes the irritable and sensorial principle as rapidly as it is supplied. Putrefaction, however, or a decomposition of the organic structure, does not readily ensue, because the auxiliaries of this change, and which are absolutely necessary to its production, such as heat, air, and moisture, are not present: for as the parts become frozen they lose their moisture or fluidity, and as there is no breach of surface there is no communication with the external air. When a limb in this state is suddenly brought before the fire it becomes gangrenous almost instantly; for by this means putrefaction obtains possession of these auxiliaries, and in its process gains the start of the remedial or restorative power of nature. And hence it is well known that the worst thing that can be done to a frozen limb is to bring it into such a situation. On the contrary, if we give time to this restorative power to exert itself while we prevent the process of putrefaction from taking place, by keeping the limb very nearly in the same condition of freezing, or rather by raising it out of this condition by slow and imperceptible degrees, we shall have the best chance of recovering it to life; since we hereby afford an opportunity for the warm and circulating blood and the active principle of irritability to push forward once more into the vessels of the frozen structure, which, however weakened and insentient, have not yet become decomposed, and to reanimate it with vital power.

GEN. XII. SPEC. I. Gangræna Sphacelus. Mortification.

Its physiology.

Why putrefaction does not immediately ensue.

Why sudden warmth mischievous:

The advantage of plunging a frozen limb first into ice-water, and afterwards into water raised just above the freezing point, and in this manner advancing it gradually to a common temperature, is of general notoriety; and it is this plan which forms the usual treatment. In what way the benefit is accomplished has been a frequent subject of inquiry; the remarks just offered may perhaps afford a satisfactory explanation of the subject.

and ice-water serviceable.

SPECIES II.

GANGRÆNA USTILAGINEA.

Mildew-Mortification.

GANGRENE DRY, DIFFUSE, DIVERGENT; COMMENCING IN THE EXTREMITIES, WITHOUT FEVER OR INTUMESCENCE, AND SPREADING TILL VARIOUS LIMBS DROP OFF IN SUCCESSION: GREAT HEBETUDE OF MIND AND BODY; OFTEN WITH VIOLENT SPASMS.

GEN. XII. SPEC. I. The necrosis ustilaginea of Sauvages.

THIS is the necrosis *ustilaginea* of Sauvages, the specific epithet being derived from the cause to which it has commonly been ascribed, and from which in various cases it seems to take its rise; I mean the use of grain vitiated or poisoned by the growth of parasitic plants in the interior of the culm or straw, chiefly the "ustilago," "blight or mildew;" whence the name of "*mildew-mortification*" among ourselves, as that of Ergot, or *spur*, among the French, from the resemblance which the mildewed or blighted corn bears to the spur of a cock, in Latin clavus, which is the name borne by this parasitic plant in the language of many botanists.

Supposed to be produced by the use of grain blighted or mildewed.

Grain thus injured by some fungus or other has been found, when employed as food, productive of two dreadful diseases; to both of which, indeed, the French have given the name of *Ergot*, as occasioned by a common cause; as they have also that of *mal des ardens* from the burning internal heat which is felt in either case. The one of these disorders is a typhous fever, with the general character of pestis, or what Sauvages calls ery-

Hence called by the French Ergot: as also Mal des ardens from its effects.

sipelas *pestilens*, which is synonymous with the third variety of PESTIS in the present work: the other is the migratory gangrene before us, which commences, without fever, in the hands and feet, with a sense of numbness and external coldness, a dusky or livid cuticle, great debility of mind and body, often violent spasmodic contractions:* and spreads rapidly over the system, till the fingers, arms, nose, legs or thighs are affected, and some of them drop off spontaneously.

GEN. XII. SPEC. II. Gangræna ustilaginea. Mildew-mortification.

Mr. Pott has described this species, with a few slight varieties of symptoms, at full length, but without appearing to satisfy himself with any particular cause. "Beginning," says he, "at the extremity of one or more of the small toes, in more or less time it passes on to the foot and ankle, and sometimes to a part of the leg, and, in spite of all the aid of physic and surgery, most commonly destroys the patient. It is very unlike to the mortification from inflammation, to that from external cold, from ligature or bandage; or to that which proceeds from any known and visible cause, and this as well in its attack as in its process. In some few instances, it makes its appearance with little or no pain; but, in by much the majority of these cases, the patients feel great uneasiness through the whole foot and joint of the ankle, particularly in the night, even before these parts show any mark of distemper, or before there is any other than a small discoloured spot on the end of one of the little toes.—Each sex is liable to it: but for one female in whom I have met with it, I think I may say that I have seen it in at least twenty males. I think, also, that I have much more often found it in the rich and voluptuous, than in the labouring poor; more often in great eaters than free drinkers. It frequently happens to persons advanced in life, but is by no means peculiar to old age. It is not in general preceded or accompanied

How described by Pott.

* Morgagni, De Caus. et Sed. Morb. Ep. LV. Art. XXIV.—Bresl. Samml. 1724. I. p. 643.

GEN. XII. SPEC. II. Gangræna ustilaginea. Mildew-mortification.

by apparent distemperature either of the part or of the habit."

In its severer attacks, however, the constitution seems to be generally contaminated, the mind and body become equally debilitated, there is great irritability, and a tendency to convulsive action.

In severer cases the mind affected as well as the body.

According to every statement this singular disease seems to be connected with a diseased state of the digestive organs, from excess of living, deleterious food, or some other cause in connection with great nervous debility:* and the tendency to gangrene proceeds rather from a deficiency of sensorial power, than from any morbid condition of the circulating system, whether atonic or entonic. And, hence, we find it best relieved by free doses of opium, in conjunction with a generous and even stimulant diet. Bark is of no avail, and the local use of spirituous fomentations and cataplasms, warm pungent oils and balsams, of as little. Mr. Pott tried them in every form, but without the smallest success: and at length employed no other topical application than smooth soft unirritating poultices; and confined himself to the use of opium alone, of which he sometimes gave a grain every three hours. And under the influence of this medicine the progress of the gangrene has often become checked in a few days, and a line of separation distinctly marked; soon after which, the mortified parts have sloughed away, the diseased bone dropped spontaneously from the affected joint, healthy granulations succeeded, and in due time a cure has been effected.

Predisposing causes.

Remedial treatment. Benefit of opium.

* Home, Facts, and Experiments, p. 31.—Ludwig, Adversar. I. i. 7. p. 188.

SPECIES III.

GANGRÆNA NECROSIS.

Dry Gangrene.

THE DEAD PART DRY, SHRIVELLED, HARD, AND DUSKY.

GEN. XII. SPEC. III. How produced.

THIS singular species of gangrene seems to proceed from a marasmus or atrophy of the affected limb, in consequence of which, as in the atrophy of the body at large, the animal oil, flesh, and fluids also are gradually absorbed, and the limb becomes emaciated and withered: "mummiæ instar pars affecta,"* says Professor Frank. During the progress of this change, it necessarily grows feebler and more torpid, till at length it is no longer capable of being stimulated by the sensorial fluid, and its different parts turn dead and rigid. In palsied limb, a termination of this kind is by no means uncommon.

Surface sometimes natural, sometimes dark-coloured; accounted for.

In some instances of this affection, the blood-vessels have collapsed, perhaps become obliterated without a retention of any of the constituent principles of the circulating fluid, and consequently the withered limb has preserved something of the natural colour of the skin. In others, the red particles of the blood, changed, as in the veins, to a dark or livid hue, have, to a certain degree, remained in the vessels and given to the limb a purple or variegated dye. And hence the species has laid a foundation for the two following varieties:

α Albida. Retaining something of

* De Cur. Hom. Morb. Edit. Tom. II. p. 18. 8vo. Mannh. 1792.

GEN. XII. SPEC. III. Gangræna Necrosis. Dry gangrene.

	White gangrene.	the natural colour of the skin.
β	Discolor. Black gangrene.	The natural colour changed to a livid, or a mixture of hues.

Why putrefaction does not take place.

It has never hitherto been satisfactorily explained how it happens that under this kind of mortification, or death, the parts should not, as in the preceding species, fall a prey to putrefaction. Perhaps the following remarks may afford some clue to this singular exception.

Explained from the phænomena of a frost-bitten limb.

We have already had occasion to observe, under the first species, that a frost-bitten limb does not putrefy so long as it continues frozen, because the accessories or co-operative powers of putrefaction, without which this process cannot take place, are not present, such as warmth, moisture, and a free influx of air. Now none of these are present in the species before us, for the limb is cold, completely emptied of its fluids, and impervious to atmospheric influence; and consequently there are the same obstructions to putrefaction in dry gangrene, as in a limb killed by the biting power of frost.

As also from those of a corpse interred in the burning sands of Egypt.

So in the burning sands of Egypt, a buried corpse is often found, if dug up a month or two after interment, with as few marks of putrefaction. I have said that warmth is a necessary auxiliary, but it must be warmth to a certain degree only: for if it exceed this, all the interior fluids will by the heat itself be raised towards the surface, and pass off rapidly in the form of vapour; in consequence of which, the animal substance whence they issue will be as destitute of moisture as if it were frozen, and hence as incapable of putrefying. Now this is the case with a body interred in the sultry sands of the Delta: all its fluids are so highly rarefied as to evaporate, and be drunk up by the bibulous soil by which it is surrounded before any organic decomposition takes place: and hence the buried corpse, instead of crumbling into dust is converted into a kind of natural mummy, some parts of which exhibit proofs of that waxy fat to which the French

chemists have given the name of adipocire: but no part of which undergoes the decomposition of putrefaction. I do not mean that this is always the case, but that it has occurred in a variety of instances, where the antiseptic incidents have been peculiarly favourable to such an effect. GEN. XII. SPEC. III. Gangræna Necrosis. Dry gangrene.

And hence Dr. Frank tells us that the dry gangrene sometimes changes into what is called humid, and at others converts the parts affected into a kind of mummy.* Changes of dry gangrene.

Dr. Alix, of Altenburg, gives a singular example of the second variety of this species, in a man of seventy-two years of age, which commenced, contrary to its usual course, with inflammatory symptoms. The back of the left hand was attended with heat, swelling, and pain, accompanied with thirst, a smart fever, and delirium. At the time Dr. Alix saw him a blackness had spread over all the hand and part of the fore-arm, which were of a gangrenous hue, but without pain, and as hard as wood. The pulse was small and the spirits low. Amputation was advised, but not agreed to. About six months afterwards he saw the patient again accidentally: the gangrene had spread up to the elbow-joint, the limb was still without pain, the pulse was better, and there was no want of appetite. As it was not supposed the man could live long, no farther inquiries were made about him till a full year afterwards, when he was found to be as firm and stout as ever, although he at this time laboured under a tertian intermittent, and had lost one of his eyes. The gangrene had spread over the whole arm up to the shoulder-joint: the limb still continued hard, and as black as smoked meat, but did not emit any cadaverous smell. In about a month from this time the arm dropped off spontaneously, without the least hemorrhage; the exposed surface of the shoulder dried without any discharge whatever, and the old man at the time of publishing the case, four years afterwards, was in the enjoyment of a very good Singular case of the second variety.

* De Cur. Hom. Morb. Ep. Class II. § 130.

GEN. XII. SPEC. III. Gangræna Necrosis. Dry gangrene.

share of health.* In this instance, the small proportion of living power which continued after the inflammation had subsided preserved the limb from putrefaction; aided by the hard and shrunk condition into which it had fallen from absorption, and a paralysis of the secernents.

Progress explained. Medical treatment.

Where there is no inflammation, topical stimulants, and especially of the oleaginous kind, as camphorated oils and warm balsams, with persevering friction, are sometimes found useful in the commencement of this disease. Repeated blistering and setons have also proved serviceable, and the voltaic trough still more so, in conjunction with a nutritive and generous diet. But when the gangrene has established itself, medical skill can do nothing more than look on and lament its want of power.

* Matthæi Francisci Alix, Med. et Chir. Doct. &c. Observata Chirurgica. Fasciculus I. 8vo. Altenburg, 1778.

SPECIES IV.

GANGRÆNA CARIES.

Caries.

THE DEAD PART ORIGINATING IN A PORTION OF THE SUBJACENT BONE: PAIN DEEP-SEATED, SUPERJACENT INTEGUMENTS FLACCID AND DISCOLOURED.

GEN. XII. SPEC. IV. Comparison of bones with cartilages and membranes.

Bones, cartilages, and membranes in their nascent state are nearly alike; being formed in the same manner, and exhibiting the same kind of structure. Membrane is an expansion of gelatine richly mapped with vessels and nerves, and containing a small proportion of albumen to give it a requisite degree of firmness; cartilage is membrane with a larger proportion of albumen to give it a still greater degree of firmness; and bone is cartilage hardened by an absorption and deposit of lime through the whole of its make. And hence bones, notwithstanding their solidity, possess the same living power and are subject to the same diseases as the soft parts.

Explanation of the specific term.

Like the soft parts, therefore, they are subject to a cessation or loss of this living principle, and the disease is in this case usually called a CARIES, a Latin term, probably derived from the Hebrew כרה "*careh*," "to dig into, penetrate, or erode," "to scoop, or hollow out." It may originate in a bone itself, which constitutes a proper caries; or it may be communicated from a superjacent ulceration, in which form it is more correctly denominated a carious ulcer.

Caries now distinguished from carious ulcer.

GEN. XII. SPEC. IV. Gangræna Caries.

Caries.

Chiefly belongs to the department of surgery.

The history and treatment of caries belong rather to the department of surgery than of medicine, and are to be learnt from writers on this branch of the profession who have expressly treated of it, among whom may especially be mentioned Wiseman,* Petit,† and Monro;‡ particularly the last, as his learned and ingenious essay on this subject ought to engage the attention of every one. The remarks, therefore, to which the author will limit himself will be general and pathological, and as summary as possible.

Causes.

Most of the causes that produce a gangrene in the soft parts may produce a caries or gangrene in the bones: as external injuries, cold, and a deficiency of nutrition in consequence of old age or deleterious food. It is also not unfrequently produced by some acrimonious or poisonous principle lurking in the circulation, as that of lues, porphyra, or scrophula.

How discovered where no external ulcer.

It is usually first ascertained, where there is no external ulcer, by an obtuse and deep-seated pain, which appears to issue from the bone; an exostosis or protuberance of the bone, or periosteum in the part affected; tenderness to the touch, a loose and flabby feel of the superincumbent integuments, and a discolouration of the skin. On being laid bare it evinces all the different modifications of sphacelus which we have just noticed in the soft parts: for it is sometimes moist and worm-eaten, forming the caries *vermouillè* of M. Petit, the cells being filled with a corrupt sanies or spongy caruncles, so that the whole assumes a quaggy appearance; and sometimes dry and wasted: and the dry variety, as in necrosis, is sometimes of a pale white, and sometimes of a black or livid hue. And hence M. Petit has subdivided the disease into four distinct species or varieties, founded on these remarks,

How divided by Petit.

* Surgery, Book II. ch. 7.

† Maladies des Os. Tom. II. ch. 10.

‡ Phil. Med. Essays, Vol. V. p. 277.

but into which we have not space to follow him. The dry caries is generally the most superficial, and consequently exfoliates most easily; the history and laws of which very curious process we have already pointed out under the genus APOSTEMA; for the economy pursued by nature in the separation and removal of a dead soft part is precisely the same as that pursued in the separation and removal of a dead portion of bone. The ancients attempted to expedite this by various means, some of which were puerile, but others far more worthy of notice; particularly the destruction of the integuments by the potential cautery, and afterwards an application of the actual cautery to the dead bone itself. Celsus gives a detailed account of this operation, which, when the caries was deep, was accompanied with numerous perforations into the bone, into each of which the hot iron was passed in succession.

GEN. XII. SPEC. IV. Gangræna Caries. Caries.

Separation how attempted to be quickened by the ancients.

Potential cautery.

Actual cautery.

Perforations into the bone.

When the restorative power of art or of nature has succeeded in forming a healthy line of separation, and detaching the dead part from the living, the former is usually thrown off in a cylindrical plate; and before the exfoliation is accomplished, we are able to hear, as Severinus has justly remarked, a shrill sound whenever the carious plate is struck with a probe, as if it were hollow. Soon after this the edges of the exfoliating part rise a little, and a little pus or even blood is easily pressed out at the margin. Here also granulations begin at this time to appear, which spread over the sound bone underneath, and seem to assist the separation of the dead plate above, so that it gradually becomes loose, and can soon afterwards be taken away without violence.

Signs of separation.

Progress afterwards.

The dead part of a bone is sometimes detached and thrown off to a very great extent, and especially in the cylindrical bones.* The whole body of the tibia has in

In the cylindrical bones often separated to a great extent.

* Bartholin. Act. Hafn. Obs. 1.—Nicholai Diss. Observ. quædam Medich-Chir. Jen. 1786.

GEN. XII. SPEC. IV. Gangræna Caries. Caries.

this manner been occasionally detached by nature from its extremities, and its place supplied by a vicarious callus which has run down the whole of the interior groove hereby produced, and acquired the hardness of bone. Several cases of this kind are given in the Edinburgh Medical Essays;* in one of which the caries appeared in both legs: the total tibia of one limb, as the writer, Mr. W. Johnston of Dumfries, informs us, being separated and thrown off at once; while that of the other was detached in small pieces and thrown out gradually. In five months from the removal of the entire tibia the patient, a boy of eleven years of age, was able to walk without crutches, continued well afterwards, and was fit for any country work; the legs being straight, with only a little thickness at the ancles. Justamond gives a similar case of the humerus, and Sherman of the thigh-bone. I have occasionally seen this natural process imitated successfully both in the tibia and the bones of the forearm, and the diseased part taken out by a saw, by which process a very long period of pain and confinement has been saved to the patient.

Examples. Tibia and fore-arm imitated by art. Both tibias.

If the caries commence in the internal laminæ, the superjacent sound part has sometimes been opened through its whole length by the trephine applied in a line of succession: the carious part has thus obtained an easy exit as soon as detached, and the entire bone has soon been renewed. The humerus was thus treated successfully in the case of a negro-boy, as related by Mr. Walker to Mr. Else, in the Medical Transactions.†

Caries of the spine. Spina ventosa what.

A caries of the spine from the tumid, and, so to speak, *inflated* appearance of the superincumbent integuments, was formerly denominated spina *ventosa:* and the term has, with great inconsistency, been since applied by many writers to all bones whatever affected in the same

* Vol. I. p. 192-4. Vol. V. p. 370.

† Vol. III. p. 27.

manner, and particularly those of the tarsus and carpus; as it has by others been applied, with equal incorrectness, to a general softness or flexibility of the bones, as in parostia *flexilis*, or cyrtosis.

GEN. XII. SPEC. IV. Gangræna aries. Caries.

In vertebral caries, Mr. Brodie has given cases which make it probable that here also the disease sometimes commences in the bones, and sometimes in the intervertebral cartilages; for in various instances the loss of substance was greater in the former, and in others in the latter.*

* Observations on Diseases of the Joints.

GENUS XIII.

ULCUS.

Ulcer.

A PURULENT OR ICHOROUS SORE, PRODUCED BY THE SEPARATION OF A DEAD PART.

GEN. XIII. Appertains chiefly to the department of surgery.

THIS genus of diseases is, in every species, a subject of manual attention, and chiefly to be remedied or cured by external means. Its mode of treatment, therefore, must be learned under a course of surgical lectures: and it is only noticed in the present place to show the exact station which it ought to bear in a general system of nosology founded on a physiological basis. Ulcus is, strictly speaking, a Greek term with a mere change of one convertible vowel for another, to give it more of a Latin form: the derivative noun being ελκος, probably, as conjectured by Eustathius, from ελκω, "traho," in the sense of "distraho," hereby producing what the Greeks called a λυσις συνεχειας, which is literally a "solution of continuity."

Origin of generic term.

Treated of under different principles of subdivision.

Ulcers have been treated of by different writers under a great variety of divisions and subdivisions; sometimes as being connected with a state of the constitution, or as being a mere local disease; sometimes as recent or chronic: and sometimes as mild or malignant; but, as local ulcers may become constitutional, the constitutional may assume various forms, the recent be rendered chronic, and the mild and malignant change places, none of these characters are calculated for clear or permanent distinction. And hence another principle has been appealed to in the volume of Nosology derived from the variety of

their external form, and they have been contemplated under the following species: GEN. XIII. Ulcus. Ulcer.

1. ULCUS INCARNANS.	SIMPLE HEALING ULCER.
2. —— VITIOSUM.	DEPRAVED ULCER.
3. —— SINUOSUM.	SINUOUS ULCER.
4. —— TUBERCULOSUM.	WARTY EXCRESCENT ULCER.
5. —— CARIOSUM.	CARIOUS ULCER.

SPECIES I.

ULCUS INCARNANS.

Simple healing Ulcer.

THE DISCHARGE PURULENT, THE SURFACE HEALTHY AND GRANULATING.

GEN. XIII. SPEC. I.

In this state a simple process of nature to restore soundness.

All other forms must be reduced to this.

WHEN an ulcer assumes this form it is hardly to be called a disease; being nothing more than the ordinary process of the instinctive or remedial power of nature to restore the substance that has been lost by external violence, or some internal morbid action, and to endow it with the same attributes of vascularity, feeling, and motion. It is to this form that all the other species of ulcer must be reduced before a cure can be accomplished or even hoped for. Even the surgeon has here little upon which to employ himself; for with cleanliness, a light and easy dressing, plain, unirritating diet, and regular hours, the processes of incarnation and cicatrization, which we have already explained under the genus APOSTEMA, will proceed spontaneously, and without obstruction, and a cure be speedily completed.

SPECIES II.

ULCUS VITIOSUM.

Depraved Ulcer.

WITH A VITIATED SURFACE AND SECRETION.

GEN. XIII. SPEC. II. **This degenerate condition exhibits itself under various forms, and results from various causes. The modifications most worthy of notice are the following:**

α	**Callosum. Callous ulcer.**	**The edges indurated and retracted.**
β	**Spongiosum. Fungous ulcer.**	**With fungous or spongy excrescences, often from a medullary base.**
γ	**Cancrosum. Cancerous ulcer.**	**With a hard, livid, lancinating, irregular, and frequently bleeding tumour at its base.**

Causes constitutional or local.

The causes in each of these may be constitutional or local; and, in managing the ulcer, it is of great importance to determine this point; for the patient may otherwise be put very needlessly upon a long course of alterants, or may omit such a course when absolutely necessary. If there be a cancerous, a scrophulous, a scorbutic, a venereal, or any other taint in the blood, it will be imperative upon us to pursue the respective modes of treatment already laid down for these several complaints, since otherwise no topical applications can be of the least avail.

Constitutional from specific taint: how to be treated.

From general debility:

There may be also a considerable degree of constitu-

tional debility and relaxation, to which the depraved state of the ulcer is owing; and in truth this is the most common of all the constitutional causes, and one which demands quite as much attention as any of the rest. In treating of abscess, we endeavoured to show that one of the uses of pus is to produce healthy granulations; and in treating of inflammation, we observed that a certain degree of vigorous and entonic, as well as inflammatory action is necessary for the secretion of pus. And hence if the system be without this condition the ulcer cannot heal; and, instead of genuine pus and healthy granulations, we shall find a watery, ichorous fluid poured forth, of no advantage whatever, and often of an acrimonious quality, that irritates and thickens, and sometimes erodes and extends the edges of the ulcer; or a thin imperfect pus which gives rise to flabby and fungous granulations that sprout up, indeed, rapidly and luxuriantly, but want firmness of texture, show a weak and morbid sensibility, and bleed and die away almost as soon as they are formed.

GEN. XIII. SPEC. II. Ulcus vitiosum. Depraved ulcer.

Where this is the case, the ulcer, whatever modification it assumes, can only be brought into a healing train by increasing the health and vigour of the constitution. This however, it is often difficult to accomplish; for, in very numerous instances of obstinate ulcers, we find the constitution has been exhausted and worn out by hard labour, hard drinking, or a long exposure to a tropical sun, and is labouring under a long train of dyspeptic, hepatic, or podagral symptoms. It is not necessary to repeat the plan it will be incumbent upon us to pursue under these circumstances, as we have already detailed it under the constitutional affections themselves. And if, by persevering in such general treatment, we can give to the constitution a sufficient degree of vigour, the only difficulty we shall have to encounter is the vitiated state, and perhaps habit, to which the ulcer has been reduced in consequence of the constitutional affection.

How to be treated.

GEN. XIII. SPEC. II. Ulcus vitiosum. Depraved ulcer.

We hence come to the local treatment of ulcers which forms a direct branch of surgical, and even manual attention. And I shall hence only farther observe that the principles which seem to have been productive of the best success, are those of changing the nature of the vitiated action by a local application of irritants; and increasing the tone of the vessels by warm suppuratives and astringents, and the pressure of elastic bandages, which should be made of calico or the finest flannel. Mr. Baynton preferred the former on every occasion, as less cumbrous and more cleanly, and as being "a better conductor of that morbid heat which so constantly affects inflamed parts." In many cases, however, and particularly in cold, edematous limbs, it is rather desirable to accumulate than to carry off heat; and here the use of flannel will be preferable to that of calico; it possesses, moreover, more elasticity, and when thin and fine is neither more cumbrous nor more uncleanly.

Principles of treatment when local.

Use of topical irritants:

Use of astringents:

bandages:

Actual cautery how far useful.

Maunoir's method of application.

When the edges or intersections of an ulcer have acquired a callous thickness, or scirrhosity, the actual cautery has often been applied with success, and especially in the manner recommended by M. Maunoir, who has given an instructive history of his practice in the ninth volume of the Medico-Chirurgical Transactions. The instrument he employs he calls, from the form of its bulb, an iron olive. It is, in effect, an iron rod with a bulb at the end, of the size of a tonquin-bean. For the sake of rapid execution he heats several of these at the same time in a fierce fire, and uses them at a white heat, passing each in succession with great speed over the morbid part, so as to make a considerable rut or groove as he proceeds. The pain endured seems to be far less than might be expected.

The cautery thus prepared and applied, has been frequently found the most effectual as well as the shortest means of extirpating cancerous scirrhosities about the lips, and other parts of the surface. And it is peculiarly

calculated for radically destroying many of those irregular and spongy excrescences which, from their readiness to bleed freely, have been distinguished by the name of FUNGUS HÆMATODES. GEN. XIII SPEC. II. Ulcus vitiosum. Depraved ulcer.

The nature and origin of these parasitic substances have not been very satisfactorily explained. By some writers, and especially by M. Roux, they are regarded as soft and fungous cancers, but they seem to be without any of the pathognomic signs by which cancers are distinguished. They are not known to be hereditary, nor to become scirrhous in any stage, nor do they chiefly affect a glandular situation. They are found in every part of the body, appearing at first like a small sarcomatous tumour, with a soft or medullary feel: the tumour enlarges, and secretes an acrimonious fluid which contaminates the parts adjoining, whether gland, muscle, cellular membrane or periosteum, and converts them into its own nature. At the same time it erodes the skin and soon sprouts above it in a loose, luxuriant and cauliflower form, of a dark red, or purple hue, loaded with blood-vessels, and bleeding profusely upon a slight puncture or even pressure. This singular fungus has often sprung up in internal cavities, as the ball of the eye, the lungs, the testicles, and the uterus: and has occasionally appeared in the breast, the spleen, and the liver. In these situations it is apt to ravage without restraint, and there is great difficulty in destroying it without destroying the organ from which it issues. But wherever the hand can follow its sproutings they are often repressed, and have been sometimes extirpated by caustics, and particularly by being sprinkled with a mixture of powder of arsenic and opium, or with charpie; and sometimes, where it is seated on a narrow peduncle, by a ligature. The actual cautery, however, wherever it can be applied, seems to afford the quickest and most effectual cure, and in the peduncular variety offers the best mean of preventing a profuse hemorrhage, by being applied to the stump after the body of the tumour has been removed by the knife. There are some surgeons, however, who

Fungus hæmatodes.

Genuine character.

Origin and progress.

Sometimes found in internal cavities.

Treatment.

GEN. XIII. SPEC. II. Ulcus vitiosum. Depraved ulcer.

depend almost entirely for the cure of all ulcers, on a restoration of the constitutional health; and contend that with the accomplishment of this, the remedial power of nature is adequate to all the rest, with local cleanliness, rest, and the use of warm or cold water according to the nature of the case. Such especially is the practice of Professor Kern in the Imperial Hospital at Vienna, who makes a boast of proscribing ointments, plasters, lotions, charpie, caustics, and even bandages themselves, except in a few cases, trusting entirely to the use of water and a simple covering of linen; and this too even in gangrenous, scrophulous, and venereal ulcers.* This practice is too simple to become very popular, but his success is undisputed.

Singular practice of Kern.

SPECIES III.

ULCUS SINUOSUM.

Sinuous Ulcer.

COMMUNICATING WITH THE NEIGHBOURING PARTS BY ONE OR MORE CHANNELS.

GEN. XIII. SPEC. III. Pathology.

WE have already seen that inflammations of every kind propagate themselves by continuous sympathy; and hence one cause of the spread of those that are ulcerative. But ulcerative inflammations do not spread equally; for those parts are most subject to their action, and consequently give way soonest, where the living principle is weakest, or the structure is most loose and cavernous. And hence a more frequent origin of hollows and sinuses in the cellular substance, particularly in the more dependent parts, as about the rectum and the urethra.

How first formed.

How deepened.

These sinuses or hollows are soon filled with lymph or some other fluid, and this fluid, in a vitiated state of the

* Annalem der Chirurchischen Klinik. 2 Vols. 8vo. Wien. 1809.

ulcer, soon becomes acrimonious and erosive; and we have hence a chemical cause of extension or elongation added to that of a structural. And to this cause we are chiefly to ascribe the origin of the fistula *lachrymalis*.

GEN. XIII. SPEC. III. Ulcus sinuosum. Sinuous ulcer.

When these sinuosities are first formed or scooped out, their walls are soft, irritable, and of the common cellular web; but when they have remained for a considerable period of time they become callous and insensible: forming the two following varieties noticed in the volume of Nosology;

Whence rendered callous.

α Recens. Recent Sinus.	The channel fresh and yielding.
β Fistulosum. Fistulous or Pipy-sinus.	The channel chronic and indurated.

The form assumed by a sinus is determined by the course of the probe; its capacity by the quantity of water or any other fluid it will contain when injected by a syringe.

The form of a sinus how ascertained.

Three modes of cure have been attempted, that of incarnation, or filling up the hollow by sound granulations issuing from the bottom; that of coalition, or an union of the walls of the sinus; and that of destroying it, by an opening down its entire length. The first is sometimes accomplished by warm detergent balsams or lotions, where the sinus is shallow. The second is more usually had recourse to where it is deeper, and attempted first by irritant and even erosive injections, so as to excite a new inflammation down the whole course of the canal, and afterwards by pressure, applied at first to its lowest part, and advanced gradually to its mouth; or, which is better, by a seton passed from the orifice of the ulcer to the utmost depth of the sinus, leaving here an opening sufficiently large for the escape of whatever matter might otherwise collect and become stagnant. The third mode of cure is effected by the knife, and where unaccompanied with danger or inconvenience from the vicinity of large blood-vessels or nerves, is by far the speediest and most decisive of the whole.

Modes of attempting a cure various.

Explanation of the three usually pursued.

SPECIES IV.

ULCUS TUBERCULOSUM.

Warty Excrescent Ulcer.

WITH TUBERCULOUS EXCRESCENCES, LOBED BY RAGGED AND SPREADING EXULCERATIONS.

GEN. XIII. SPEC. IV.

Synonyms. Noli me tangere. Lupus.

General character.

THIS is the NOLI ME TANGERE of many writers, and the LUPUS of others; evidently referring to the caustic acrimony of the discharge which flows from it, and affects the fingers or whatever other parts come in contact with it; and the ravenous or wolf-like voracity with which it preys on the neighbouring organs, spreading in ragged and fungous lobes, or with cracking and callous edges, and destroying the skin through an extensive range, and the muscles to a considerable depth.

Why called a cancer.

A valuable practical paper upon this disease is to be found in the Philosophical Transactions,* addressed to the Royal Society by M. Daviel, surgeon to Lewis XV. of France; who describes it as a cancer, to which, indeed, from its tendency to ramify and the virulence of its discharge, it has some resemblance; and whence Sauvages denominates it cancer *Lupus*.

Origin and progress.

It commences in the subjacent periosteum or perichondrium, from a diseased condition of the organ: at first assumes externally the form of a tubercle or wart; and though found over the body generally, is most common to the eye-lids, nostrils, cheeks, and other parts of the face. It is highly irritable; and when the tubercle has acquired the size of a fig or filbert

* Vol. XLIX. year 1755.

it ulcerates the cuticle, shows a callous edge, and spreads with a most offensive ichor in every direction; often throwing forth fungous excrescences from the bottom. GEN. XIII. SPEC. IV. Ulcus tuberculosum.

Occasionally before it opens externally, from the acrimony secreted below, an herpetic vesication is formed on the surface. Warty excrescent ulcer. Sometimes herpetic on the surface.

If partially extirpated it grows again with rapidity and to a greater extent; caustics always exacerbate it; and the only radical cure consists in dissecting the diseased part, and removing the whole of the periosteous or cartilaginous base, as far as it appears to be affected. Where, however, the case is recent, and there is no morbid irritability in the habit, the diseased action has yielded to a skilful application of counter-stimulants, as a dilute solution of the nitrate of silver, or aromatic vinegar; after which the tar ointment has been found most serviceable. Medical treatment.

SPECIES V.

ULCUS CARIOSUM.

Carious Ulcer.

THE ULCER EXTENDING INTO THE SUBSTANCE OF THE SUBJACENT BONE.

WHEN a portion of a bone is killed by an ulcerative process commencing in itself, it forms, as we have already observed, a CARIES properly so called. When it is destroyed by the spread of a sore commencing in the integuments or muscles above it, the disease is called a CARIOUS ULCER: and when the ulceration extends to the medulla of the bone, it is often denominated an arthrocace. GEN. XIII. SPEC. V. Carious ulcer how distinguished from caries. Arthrocace what.

GEN. XIII. SPEC. V. Ulcus cariosum. Carious ulcer.

Upon this subject, however, it is not necessary to enlarge in the present place; as we have already discussed the general nature and the ordinary forms of ulceration under the SECOND SPECIES of the genus before us, and the mode by which the death and separation of one portion of bone from another are effected, under the FOURTH SPECIES of the preceding genus.

General nature described already.

END OF VOL. III.